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DEFENSE INDUSTRY BULLETIN

February 1970

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DEFENSE INDUSTRY BULLETIN

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Suggestions from industry representatives concerning possible topics for future issues are welcome and should be forwarded to the Editor at the address shown below.

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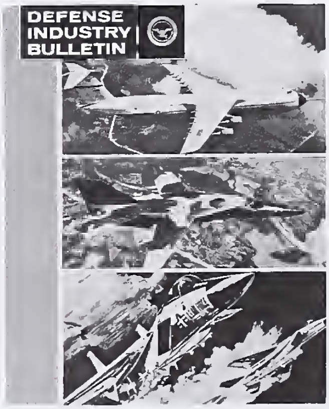

Major systems being managed by the Aeronautical Systems Division, Air Force Systems Command, are the C-5 transport, the F-111 fighter-bomber, and the F-15 air superiority tactical fighter. The Aeronautical Systems Division story begins on page 15 in this issue.

Defense Procurement Circular No. 74

New Subcontractor Cost or Pricing Data Required

Charles Goodwin

Changes in policy relating to subcontractor cost or pricing data and audit requirements, which became effective on Jan. 1., 1970, were published in Defense Procurement Circular (DPC) No. 74, dated Oct. 10, 1969. The provisions of DPC 74, now in effect, will eventually be incorporated in a future revision to the Armed Services Procurement Regulation (ASPR).

The changes to ASPR policy essentially are to:

- Provide new requirements for obtaining cost or pricing data from first- and lower-tier subcontractors at the time of pricing a prime contract. Exemptions equivalent to those provided by Public Law 87–653 are recognized. Also failure to comply may be excused in exceptional cases, provided adequate alternate arrangements are made.
- Clarify the application of cost or pricing data requirements to contract modifications netting under $100,000, but based on additive and deductive costs aggregating $100,000 or more.
- Provide a guarantee of accuracy—as distinguished from completeness and currency—in cases where only partial cost or pricing data is required.
- Conform the Audit and Records clauses under ASPR 7–104.42 to the Minshall Bill (Public Law 90–512) amendment to 10 U. S. Code 2306(f).

This new policy is actually an extension to Public Law 87–653, commonly known as the "Truth in Negotiations" Act. The law provides that prime and subcontractors be required to submit cost or pricing data prior to award of certain negotiated contracts and subcontracts expected to exceed $100,000. They must certify that the data is accurate, complete and current. The law further protects government interests by requiring inclusion of a Defective Pricing clause in each contract negotiated on the basis of cost or pricing data. This gives the Government a contractual right to a price reduction if the price is increased because of a submission of inaccurate, incomplete, or non-current cost or pricing data.

The provisions of DPC 74 are not a legal requirement, because Public Law 87–653 only calls for subcontractor cost or pricing data at the time of award of the subcontract. Generally, this occurs after award of the prime contract and, literally, the statute does not require subcontractor data when the prime contract is awarded. Nevertheless, legal considerations played an important part in the deliberations of the ASPR Committee in formulating the policy. Public Law 87–653 clearly manifests a Congressional concern with obtaining data

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from subcontractors and it is plainly in keeping with the spirit, if not the letter, of the statute that this data be obtained at a time when it serves a useful purpose to the Government.

DPC 74 was not arrived at lightly. It has been in the making for three years. During the three years, there was repeated consultation and coordination within the Military Departments, and with the General Accounting Office and industry. At all times, two questions were uppermost in the formulation of the new policy: Will it work, and is it worthwhile?

Members of the ASPR Committee know that they have added to the burdens and responsibilities of government contracting officers as well as prime and subcontractors. We did our best to evaluate the pertinent factors. On the one hand no one doubted that it paid to get accurate, current and complete data if the subcontract amounted to $25 million. On the other hand, no one thought it paid for subcontracts under $10,000. Somewhere in between, there was a cross-over point where the costs and complications of getting subcontractor data paid off in better pricing. What was cost effective—$100,000 or $1,000,000? Ultimately, the judgment of the Military Assistant Secretaries fixed that point at $1 million or 10 percent of the prime contract price, whichever is less, provided the subcontract is $100,000.

DPC 74 is not the last word. We expect to watch its impact carefully as suggested by the General Accounting Office. We hope to learn by experience. If it proves bad, it can be cut back. If good, it can be extended.

The goal is still good pricing and data is only one of the elements of good pricing. In the end, good pricing depends on the judgment, experience, techniques, energy, resourcefulness, and personal effectiveness that government contracting officers and industry representatives bring to the process of negotiation. DPC 74 leaves ample scope for discretion, judgment and responsibility. In some respects, the DPC is a design specification, telling what must be done but, in other respects, it only gives a performance objective—good pricing. How good pricing is to be achieved is up to the individuals involved—both government and industry.

Definition of Terms

Preliminary to discussing the policy provisions of DPC 74, a definition of terms will be useful to convey some of the basic differences and key concepts under the new regulation.

Contractor data is data that a prime contractor knows. If that data is defective, it is because the prime contractor himself is at fault.

Subcontractor data is the data a subcontractor primarily knows and, if that data is defective, it is because the subcontractor is primarily at fault. All the prime contractor necessarily knows about such data is what he is told by the subcontractor, and not whether it is right or wrong. However, subcontractor data does become contractor data to the extent of the physical package itself. When the subcontractor submits his data to the prime contractor, from that moment on, if there is any mistake in transmission of it to the contracting officer, that is an error or defect in contractor data.

Subcontract data is all data which is relevant to any particular subcontract and that can include *both* subcontractor data and contractor data, *i.e.*, anything the prime contractor knows that would be relevant in respect to a particular subcontract estimate. This can include lower quotes from other vendors; it can include prior purchases; it can even include the prime contractor's own in-house component production experience data. Maybe he knows what the engineering costs of a particular component ought to be, perhaps just as well as the subcontractor. The point to be emphasized is that the Government needs all information in support of a subcontract estimate—not only the data that is subcontractor data, that comes from the subcontractor. We need *subcontract* data coming from the prime contractor as well.

Actual subcontractor is the man who, at the end of all negotiations, is just about ready to be awarded the subcontract.

Prospective subcontractor is the man who is tentatively selected at the very beginning of cost estimating. He is the man who perhaps has given the prime contractor the best preliminary quote. He is the one with whom the prime intends to conduct further negotiations if he gets the prime contract award and, probably, the one who will receive the final subcontract award.

Certified data, of course, is the data for which the Government gets a certificate saying the data is accurate, current and complete.

Guaranteed data is any data for which the Government has a right to a price reduction under the Price Reduction clause. Guaranteed data includes all certified data, but it includes much more, *i.e.*, it also includes uncertified data obtained by the Government from prospective subcontractors and data of a partial nature.

Old and New Data Requirements

There are in the present ASPR two main categories of requirements for cost or pricing data:

- Category I—Data obtained before *contract* award or modification.
- Category II—Data obtained before *subcontract* award or modification.

Previously, the Government obtained *contractor* data before *contract* award or modification, and it required the prime contractor to obtain *actual subcontractor* data at the time of *subcontract* award or modification. It should be noted that Category II data was obtained only when Category I data was obtained. In other words, a subcontractor never had to submit data unless the prime contractor previously or subsequently had to submit his data.

It should also be noted that under Category I covering contractor data, there were two subcategories: mandatory and judgmental. It was mandatory over $100,000; it was judgmental under $100,000. Under Category II covering subcontractor data, there was no similar choice or judgment. Everything depended upon the kind of a Subcontractor Data clause the prime contract contained. Before making the prime contract award, the contracting officer did have a judgment to make as to whether he wanted data from the prime contractor below $100,000. That judgment, in turn, affected any judgment as to the amount he included in the contract clause for submission of actual subcontractor data in the Category II area.

Note the use of the word judgmental—not optional, discretionary, or anything else to indicate that the contracting officer had a free choice in this matter. He is expected to exercise a judgment as to whether he needs data for good pricing. If he needs it, he is expected to get it. However, the existing ASPR provisions discourage getting data under $100,000 except in the minority of cases, because the cost and time involved are not generally justified by the amount of price benefits.

To the foregoing requirements for getting *contractor* data and *actual* subcontractor data, all that the new DPC does is include an additional requirement for getting *prospective* subcontractor data. The addition is a new subcategory in the Category I area—"before contract award or modification." At that time, the contracting officer is going to get not only contractor data but also prospective subcontractor data when data is required under Category I.

Under the new subcategory for prospective subcontractor data, there are also two subdivisions: mandatory and judgmental. The data is mandatory if the prospective subcontract estimate is over $1 million, or over 10 percent of the estimated prime contract price and also over $100,000. In those circumstances, it is mandatory that the contracting officer get prospective subcontractor data. On the other hand, he has to make a judgment as to whether he needs such data under these mandatory amounts. That judgment applies, generally, with respect to prime contract estimates between $1 million and $10 million. If the prime estimate is over $10 million, prospective subcontractor data will be mandatory in any event for 10-percent subcontracts. If the prime estimate is under $1 million, since 10 percent is less than $100,000, the data for prospective subcontractors will not be mandatory. The contracting officer can request it even then, but it is equally subject to the ASPR provisions discouraging getting data in these circumstances. In any event, the subcontract, generally, will be in an amount between $100,000 and $999,000 for the judgmental area to apply.

The new requirement for prospective subcontractor data is wholly additive. It in no way diminishes the requirements for data under the existing ASPR, either in connection

COST OR PRICING DATA

	I. BEFORE CONTRACT AWARD OR MODIFICATION						II. BEFORE SUBCONTRACT AWARD OR MODIFICATION
	A. CONTRACTOR DATA			B. PROSPECTIVE SUBKRDATA (applicable only when contractor data required)			ACTUAL SUBKRDATA (applicable only when contractor data required)
	(1) MANDATORY Over $100,000	(2) JUDGMENTAL Under $100,000		(1) MANDATORY Over $1,000,000 or over 10% & $100,000	(2) JUDGMENTAL Other SubKs		MANDATORY Over $100,000 but may be less as specified in prime Sub Data Clause
		(a)	(b)		(a)	(b)	
ACC	Id.	Id. or	Partial	Id.	Id. or	Partial	Id.
Exemptions	Id.	Id.	NA	Id.	Id.	NA	Id.
Waiver	Id.	Id.	NA	NA	NA	NA	Id. *
				Excuses	Excuses	NA	
633	Id.	Id.	NA	Id.	Id.	NA	Id.
Certified	Id.	Id.	NA	NA	NA	NA	Id.
KR Handshake	Id.	Id.	Varied	Id.	Id.	Varied	Sub Handshake
Price Red. Cl.	Id.	Id.	NA Id.	Id.	Id.	Id.	Id.
Audit Cl.	Id. *	Id. *	NA	NA	NA	NA	Id. *
Sub Data Cl.	Id. *	Id. *	NA	NA	NA	NA	Id. *

* Generally Id - Identical NA - Not Applicable NA Changed to Id. by DPC 74

with contractor data or in connection with actual subcontractor data. Even though a prospective subcontractor has submitted his data under this new requirement at the time the prime contract award is made, later on he has to submit it again at the time he actually receives a subcontract award because this is what the law requires.

Under the existing mandatory requirement for getting contractor data, it has to be accurate, current and complete. It is subject to the standard exemptions based upon adequate price competition, established catalog or market price, or price established by law or regulations. Secretarial waiver is sometimes justified and is permitted, but these cases are rare. It has to be submitted on a DD Form 633, and it has to be certified. The effective date of the certification is the date of the prime contract "handshake," the date the contracting officer concludes negotiations with the contractor. After that, the remaining actions necessary might include business clearance, funding, and drafting and executing the formal contract which has to incorporate the Price Reduction clause, the Audit clause, and the Subcontractor Data clause.

With respect to existing requirements for actual subcontractor data, there are exactly the same provisions: accurate, complete and current (ACC), exemptions, waiver, 633 and certification. The subcontract is subject to the Price Reduction clause, the Audit clause and the Subcontractor Data clause. The only difference is in respect to the effective date. This date is when the *subcontractor* walks away from the final negotiations with the prime contractor. In other words, it is the date of the subcontract handshake, rather than the date of the prime contract handshake.

The new mandatory requirements, with respect to getting prospective subcontractor data over $1 million (or over 10 percent), include many of the same elements that the prime contractor has to contend with. Data must be accurate, current and complete. It is subject to the standard exemptions. It has to be submitted on a 633. It is effective at the time of the *prime contract* handshake. It is subject to a Price Reduction clause. On the other hand, such data is *not* subject to an Audit clause or a Subcontractor Data clause, for the obvious reason that there is no existing subcontract at that time to provide a vehicle for inclusion of such clauses. The prospective subcontractor data can be made subject to the Price Reduction clause because that is a clause in the prime contract itself.

No Certificate

Prospective subcontractor data does *not* have to be certified by the subcontractor. We have dispensed with certification to avoid unnecessary paperwork. The statute does not make the Government's right to a price reduction depend upon certification. Certificates are, therefore, not legally necessary. The Price Reduction clause can be drafted in such terms that the prime contractor is responsible for a defect in the data, even though it is not certified by the prospective subcontractor.

Under DPC 74, a new concept has been introduced—the concept of excuses. This is broad enough to encompass the kinds of situations that were previously covered only by waiver, so waiver is not now applicable to prospective subcontractor data. We recognize that there are going to be times when, because of the urgent nature of the procurement or for various other reasons, the prime contractor is not going to be in a position to get a complete package of subcontractor data from his prospective subcontractors. So we have provided for excuses. In order to discourage excuses, though, we make it clear that the prime contractor must have generally complied with the requirement for getting subcontractor data. An excuse will be recognized only in exceptional cases. To further discourage it, we require that an excuse must be approved above the level of the contracting officer. It must be approved by the Head of the Procuring Activity (HPA).

When there is an excuse, consideration of various alternatives to take the place of the prospective subcontractor data is required. The contracting officer can either give the contractor additional time if that is feasible in the light of the procurement or, if that cannot be done, the parties can set that particular subcontract item apart, price the rest of the contract, and hold the missing item out for redetermination, renegotiation, or adjustment on the prime contract price. It will be priced out separately and added to the prime contract price, whenever the contractor can get a subcontract price and supporting data. Hopefully, at least a ceiling will be fixed. Conceivably, it may even be possible for a prime contractor to satisfy the contracting officer that he already has enough in-house data on the basis of past purchases, so that the contracting officer can minimize the risk that would be involved in dispensing with up-to-date subcontractor data. With the approval of the HPA, he can then, without getting data from a prospective subcontractor, make a determination that the overall prime contract price is reasonable. The HPA excuse approval provides a vital link in documenting the file related to the procurement.

In the judgmental areas under the existing and new requirements, the contracting officer can have either accurate, current and complete data, or he can make a judgment that only partial data is required. If the contracting officer decides that he needs accurate, current and complete contractor data, then all the same elements are applicable as in the case of mandatory contractor data—ACC, exemptions, waiver, 633, certification, etc. Equally, if he makes a judgment requiring accurate, current and complete prospective subcontractor data under $1 million, then exactly the same elements apply as in mandatory prospective subcontractor data situations.

On the other hand, if the contracting officer makes a judgment that he only needs partial submission of prospective subcontractor data, then none of the mandatory elements apply. The only exception involves price reduction. Formerly, partial contractor data was not subject to the Price Reduction clause. By virtue of DPC 74, a change has been made calling for a guarantee of such partial contractor data as well as partial prospective subcontractor data. This is accomplished by revision of the Price Reduction clause.

It is emphasized that the existing data requirements have not been changed in any respect except in this one area where we have introduced a guarantee of partial contractor data. This is wholly additive, and in no way minimizes the existing requirements.

RFP and 633 Flow

When the contracting officer sends a request for proposal (RFP) to the contractor, the contractor has to decide what kind of components he will procure and from what subcontractors he is likely to procure them. He, in turn, makes up RFPs which are sent to his various subcontractors. The same process takes place at the subcontractor level. The subcontractor sends RFPs down to his sub-subcontractors. The new requirements are applicable *not only* to first-tier subcontractors. They are applicable to *all tiers* of subcontractors, as long as they are over $1 million or 10 percent of the *prime* contract price.

Development of 633s and their flowback starts with the sub-subcontractors. They make up the 633s—their data package—and send them to their higher-tier subcontractor. He, in turn, makes up his data package in the form of a 633 and incorporates the data packages he received from his sub-subcontractors. In lieu of submitting a 633 data package, subcontractors can claim exemptions just like the prime, if they can show that their particular components can be priced on the basis of adequate price competition, or catalog or market price. Also, a subcontractor may claim an excuse for the reason that he does not have time or is not otherwise able to get his data package together. All of these subcontractor data packages, claims of exemptions, and claims for excuses flow back to the prime contractor.

The prime contractor then makes up his own 633 data package, incorporating in it the data packages, excuses and exemptions received from his subcontractors, and sends it to the contracting officer. The contracting officer gets one submission, preferably, of a 633 which speaks to all elements of his procurement.

Recognizing that some subcontractors are not going to be willing to submit their cost and pricing data to the prime contractor, provision has been made for their direct submission to the contracting officer. The new regulation states that the prime contractor has to submit, or *procure the submission of*, subcontractor data. Some people have raised the question whether, by using the word "procure," we expect the prime contractor to pay for a submission by the subcontractor. The answer is "No, we do not expect him to pay for it." All we want is to make sure that the prime contractor recognizes that he has the responsibility for obtaining submission of all subcontractor data.

Contracting Officer and 633

When the contracting officer receives the price proposal—the 633 data package, he has to consider whether exemptions are justified and whether the price is supported, notwithstanding the exemption. Similarly, with respect to excuses, he has to make sure that they are limited to exceptional cases, and even consider the possibility of disqualifying the prime contractor. If a prime contractor fails to submit prospective subcontractor data, this may be cause for disqualification. In any event, the contracting officer has to consider whether excuses are justified, whether the prime contractor has supported the missing pricing elements by some means other than prospective subcontractor data, and what his alternate arrangements are. The contracting officer also has to assure that he has received a 633 for each subcontractor who is required to submit a 633, and to consider the necessity for a preaudit or a review and evaluation of the prime and subcontractor data packages.

Prime Negotiations and Award

What happens at the time negotiations are conducted and completed, and you have a handshake?

The prime contractor is required to update his own submission and all complete subcontractor data to the time of the handshake. Before he signs the certificate, he must assure that nothing has occurred in his own "house" that will render his own data submission noncurrent or incomplete. This is not a new requirement. But, more important than that, he will have to check with his subcontractors to make sure that nothing has happened between the time they originally submitted 633s and the time of the handshake, which renders their data non-current or incomplete as of the time of the handshake. Hopefully, these actions can be expedited by telephone calls, to be followed by written confirmation. Certainly, most experienced subcontractors, who are dealing in subcontracts over $1 million, should be familiar with the new DPC, and should be aware of the fact that they will be called upon to update their first data submission to the time of the handshake.

Is this going to be a practicable problem? We tried to ease the problem by eliminating the need for a certificate. For example, we do not want 42 subcontractors being contacted in writing and required to submit 42 subcontractor certificates of cost or pricing data. A telephone verification will suffice. Certificates are not essential for the protection of the Government if it falls within the mandatory limits, or was specifically required by the contracting officer. In any case, it is the responsibility of the prime contractor to update the subcontractor data to the time of the prime handshake with the Government. This applies, whether the subcontractor data is submitted to the contractor or directly to the Government.

When negotiations are being conducted, the contracting officer may have a question whether more data is needed in the light of the kind of negotiations in progress or, perhaps, in the light of Government changes in components or prime contractor changes in production plans.

When negotiations are completed and the handshake occurs, the contracting officer is going to have to worry about incorporating special arrangements for excuses in the contract, such as a Deferred Pricing clause. DPC 74 calls attention to one type of Deferred Pricing clause that is now in the ASPR for redetermination contracts. When a contract is redetermined, components must be fully priced out at that time, but a clause is suggested for deferring the pricing of one or more components as an exception. The contracting officer can use that Deferred Pricing clause as a guide to the kind of special provisions he can make for excused components under the DPC.

Over and above everything else, the contracting officer has to make a determination whether the price is reasonable and, ultimately, get HPA approval of subcontractor excuses. To support the excuses, he must show how he priced out the contract in the absence of this data, and also get approval of the deferred pricing arrangements or alternate arrangements he has made to supply this information gap. Normally, these actions occur during the business clearance phase.

Award of Subcontracts

After the award of the prime contract, what happens upon award of actual subcontracts?

It is emphasized that the prime contractor is completely uninhibited with respect to his freedom of action in negotiating subcontracts. He may change his subcontractor. He is not tied down to a particular subcontractor, if for any reason he can get a lower quote from anybody else, or perform the work in-house. He is free to negotiate a lower price. He is free to change his specifications. It will be to his complete advantage to take any of these actions because whatever he saves, as a result of them, goes into his own pocket. The only thing the Government can possibly take away from him is any overpricing of the original prime contract by reason of a defect in a prospective subcontractor's data. That would be the case regardless of any subcontract developments—the prime can still be charged for any excess pricing due to defective data submitted by a subcontractor. There is one exception in the case of the prime contractor changing his subcontract, which will be discussed later.

When the prime contractor awards the actual subcontract, we have a "new ball game." New submission of subcontractor data—a new 633—is required. At this stage the subcontractor data must be certified. That is a statutory requirement, as well as a clause requirement. If it is feasible and saves time, the subcontractor may make a new data submission by making reference to his prior prospective subcontractor 633 submission, but making sure that he updates it. He does not necessarily have to repeat the entire package. He can incorporate it by reference, if that is helpful to him.

It must be made clear that this new submission may give rise to a completely independent price reduction potential on the part of the Government. One price reduction potential arose when the prime contract was awarded if there was any defect in the prospective subcontractor data. A new one arises if award of the actual subcontract is affected by defective data, provided any element of government prime contract pricing follows and is affected by the defective subcontract data.

At the time of subcontract award, the prime contractor will have to consider what kind of a Price Reduction flow-down clause he wants to incorporate in the subcontract for his own protection. Here there is a problem of drafting a clause to cover the old data submission when the subcontractor was merely a prospective subcontractor, as well as the new actual subcontractor data. This is a joint problem for the prime and the subcontractor data. It gets a little bit tricky when there is a difference in price between the estimated subcontract and the actual subcontract. If the actual is lower, is the reduction in price due perhaps to defects in the original data? Or is it due to intervening developments in the market or in production methods, designs, or materials? Or is it due simply to good hard bargaining? So there is a tricky problem of trying to draft a flow-down clause that will discriminate between these various possibilities, and either minimize the right to a flow-down indemnification or, at least, provide appropriate credit for those reductions which represent a shrinking out of the original excess overpricing due to defective data.

Revised Price Reduction Clause

The prior Price Reduction clause provided for a prime contract price reduction because of defective *contractor* or *actual subcontractor* data. These were both tied to the prime contractor's certificate. Under the new clause, provision has been made also for defective *prospective subcontractor* data. This is not tied to a certificate. A guarantee of defective partial data has also been added. This guarantee does not go to accuracy, currency and completeness. It is limited only to accuracy and, here again, it is not tied to a certificate.

Accuracy, Timeliness

Accuracy by itself imparts certain aspects of timeliness and completeness. The data must be what it purports to be, *i.e.*, as represented. If it is represented to be data as of a particular date, it must be current as of that particular date. It does not have to be current to the date of a handshake but, at least, it has to be current as represented. If there is no specific date for the data that is submitted, then presumably there would be the problem of implying a reasonable date. Obviously, if the contracting officer requests overhead data from the contractor and receives it, it is inferred, unless otherwise stated, that it is reasonably current as of the time submitted. It cannot be 10 years old. Equally it should be, within its own limits, complete. If overhead data is requested, the contracting officer is entitled to get complete overhead data. It does not have to be complete as to labor cost or material cost but, at least, it has to be complete overhead data, unless the prime or subcontractor makes it clear that he is only submitting overhead elements of a certain kind.

Certain clarifications have been introduced into the Price Reduction clause. Prior to DPC 74, subcontractor data was tied to the date of the prime contractor's, rather than the subcontractor's, certificate, This has been changed. The language has also been changed to eliminate ambiguity by making it clear that data must be "complete, accurate and current as certified" so that, in the absence of certification, the Government has no more right to expect completeness and accuracy, than it has with respect to currency. The new language is used to make all government rights, because of defects of any kind in contractor data, dependent upon getting the certificate from the contractor.

A provision has also been incorporated dealing with a change of subcontractor. In effect, it tells the prime contractor that, if he changes his subcontractor, the Government will have cost reduction rights for defective estimated subcontractor data only to the extent that he has gotten a lower price from another subcontractor.

To illustrate, if a prospective subcontract estimate is $2 million, and there was $500,000 excess due to defective data, the correct subcontract estimate should have been $1.5 million. Then, if the prime contractor changes his subcontractor and pays more than $2 million, the Government gets nothing back. Equally, if the prime contractor pays less than $1.5 million, the Government gets the entire $500,000 excess pricing back. However, if the new subcontractor's price is $1.9 million then, even though the defective pricing was $500,000, all that the Government gets back is what the prime contractor saves—$100,000—and the same applies down the line when the new subcontractor's price is $1.8 million, $1.7 million, etc. However, if the prime contractor deals with the same subcontractor, then the Government is entitled to the full price reduction. This pertains only when there is a change in subcontractor or the prime contractor makes a decision to perform the work inhouse, rather than to subcontract it at all. A caution, however, the subcontract may be covered by a contractual requirement for incorporation into a make-or-buy plan and be subject to certain approvals in that regard.

Odds and Ends

DPC 74 incorporates in the ASPR the kind of provision now found in the Defense Contract Pricing Manual to deal with "ups and downs." If in connection with any contract modification, there are additives and deductives which total in the aggregate more than $100,000, then there is a mandatory requirement for cost or pricing data even though the net result is under $100,000. The deductive can be $70,000 and the additive can be $40,000, for a net reduction of $30,000. However, since $110,000 in costs were involved, the modification is subject to the mandatory cost or pricing data requirement. To clarify any doubts on the subject, it has been incorporated into the Price Reduction clause itself.

There is one qualification. That is when there are a number of modifications and changes, that are completely unrelated and separately priced, so that each could be handled as a separate modification. For administrative convenience, the contracting officer simply "bunches" them together. For example, modification "A" is $50,000, modification "B" is $10,000, modification "C" is $10,000, modification "D" is $50,000. If all those modifications have been priced separately in contract negotiations, then the mere fact that they are grouped together and formalized with one change order, and the total goes over $100,000, does not make the formal change order the requirement for cost or pricing data. It is as if there were four, or five, or six separate formal modifications. However, if during negotiations all of these modifications are grouped together and an overall price is set for three, four, five, or six modifications, and each has not been priced separately, then the final "lump sum" modification is subject to the "ups and downs" requirements.

The Audit clause has also been changed to adapt it to the new Minshall Bill, which has some language slightly different from the ASPR. Also, reference to cost contracts has been eliminated, and it has been made clear, with respect to the subcontract flow-down clauses, that they apply only in connection with a modification that the prime contractor has been subjected to. Essentially, all that was done was to clarify or eliminate some things that were oversights on previous revisions.

The last point of discussion is the effective date of the DPC 74. It became "effective" on Jan. 1, 1970, and that is a term of art which is defined in the ASPR itself to mean that the DPC applies to new requests for proposal initiated on or after Jan. 1, 1970. If a request for proposal was initiated before that date, the mere fact that negotiations continue after Jan. 1, 1970, does not call for mandatory application of the new DPC 74 requirements which changed prior regulations.

The discussion in this article has compared the new DPC requirements with the previous provisions in the ASPR with respect to submission of *contractor* or *actual subcontractor* data. We have examined the new DPC 74 requirements for getting *prospective subcontractor* data at the time a contract award or modification is made, plus the changes in the Price Reduction clause with regard to a guarantee of any partial data as well as prospective subcontractor data.

Again, I want to say that DPC 74 is not the last word. We are going to have to continue wrestling with the problems of Public Law 87–653, and refine our policy as we go along. We will welcome constructive criticism, suggestions and support from industry representatives who are affected by these policies formulated by the Defense Department.

Army to Use NASA Low-Speed Aviation Research Facilities

The Army Materiel Command (AMC) and the National Aeronautics and Space Administration (NASA) have agreed to the joint use of NASA test chambers, wind tunnels and other facilities by scientists and engineers for the conduct of low-speed aviation research.

More than $100 million is expected to be saved by the agreement through the elimination of separate low-speed aviation research facilities the Army would need.

Under a similar agreement in 1965, the Army Aeronautical Research Laboratory was established at the NASA-Ames Research Center, Moffett Field, Calif. The new agreement expands the Ames effort, and establishes similar arrangements at the Langley Research Center, Hampton, Va., and the Lewis Research Center, Cleveland, Ohio. A total of 175 Army personnel, civilian and military, will be assigned to the three facilities.

The new agreement will allow the Army to increase studies in the areas of helicopter research, rotor blade aerodynamics and structural dynamics, V/STOL aircraft wind tunnel effects, STOL model tests, and parachute performance, deployment and environment tests.

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Managerial Talent for Emergencies

Lieutenant Colonel Allan R. Zenowitz, USAR

Three times within our memory wartime emergencies have caused the nation to conduct a rapid and costly search for key executives to help provide leadership, guidance and staff for an expanded Federal Government. Time and geography were on our side then. Now, in the thermonuclear, intercontinental ballistic missile age, time and space compression require the nation to have leadership and managerial talent on standby reserve.

To meet this potential emergency need for talent, the President and the Congress created the National Defense Executive Reserve (NDER), citizen leaders from the private sector who stand ready to answer a Presidential call to serve. The NDER is the historical successor to the thousands of executives, from the private sector, who staffed many national government agencies during two world wars and the Korean emergency. The NDER was established by Presidential executive order in 1956 and strengthened in 1964 by a new executive order. It is a government-wide corps under the central management and direction of the Office of Emergency Preparedness, with units in eight departments and agencies having mobilization responsibilities. Current strength is about 4,400 executives.

NDER is organized to meet two types of mobilization threats:

- Limited war.
- General or nuclear war, when we would be forced to decentralize the leadership of Government and, with it, management of the nation's resources.

The Vietnam war has required neither controls over the country's economy, nor additional staffing of federal agencies. A more extensive limited war could lead to a gradual mobilization of the National Defense Executive Reserve. In case of a nuclear attack, executive reservists would report to predesignated mobilization headquarters to perform their emergency assignments.

There is a continuing effort to enroll qualified executive reservists from business, government, labor, agriculture, the professions and the academic community. Because of the extraordinary authority executive reservists might exercise over the nation's total resources, they are chosen for their judgment, prudence, experience and character, as well as technical and professional capability.

NDER members are selected and designated by heads of federal departments and agencies. Candidates are recruited by federal officials and are generally nominated by business, professional, labor and other groups. Volunteers also account for some of those designated.

Candidates must pass a security background investigation.

An executive reservist and his employer sign a statement of understanding, indicating that the reservist will be available to receive peacetime training and that he will report for federal employment in event of an emergency.

The NDER training program is planned to avoid undue demands on the executive reservist's time. It is scheduled so that the yearly demand on his time is only a few days. Training includes regional and national conferences on broad aspects of mobilization, and unit training sessions that concentrate on individual agency programs. Executive reservists also participate in discussions with federal officials on specific mobilization problems. Test exercises are included in the executive reservists' training program. Reservists receive no pay for pre-emergency training. When called to duty in an emergency, they will become federal employees and may be paid under salary schedules then in effect.

Membership in the military Ready Reserve normally precludes designation as an executive reservist.

Assignments in the NDER are for three years and may be renewed. Recruitment is concentrated on the 35–55 age group, with termination compulsory at age 70.

The Office of Emergency Preparedness, Executive Office of the President, Washington, D.C. 20504, can furnish complete information about the NDER.

Lieutenant Colonel Allan R. Zenowitz, USAR, holds a mobilization assignment with Defense Supply Agency. He is Director, Massachusetts Civil Defense Agency, and President, National Association of State Civil Defense Directors. He holds a bachelor of arts in government from University of Connecticut, and a juris doctor from New England School of Law.

FROM THE SPEAKERS ROSTRUM

New Challenges Ahead in Aircraft Structural Integrity Program

Excerpts from Keynote Address by Gen. James Ferguson, USAF, Commander, Air Force Systems Command, at Air Force Fatigue and Fracture Conference, Miami Beach, Fla., Dec. 15, 1969.

General James Ferguson, USAF, is Commander, Air Force Systems Command, with responsibility for providing the weapon systems and meeting the technological needs of the total Air Force mission. Before assuming his present command, General Ferguson served as Deputy Chief of Staff for Research and Development at Headquarters, U. S. Air Force.

. . . Thanks in great part to what our laboratories—military in-house, university and industrial—have achieved in materials, structures, flight dynamics, propulsion, guidance, avionics, and other disciplines, we have what really amounts to a renaissance in aircraft. The YF–12, SR–71, F–111, C–141 and C–5 are only a few examples of the advances that have already been accomplished. Each represented an entirely new order of capability over previous tactical, strategic and airlift aircraft. Now we have started to develop the F–15 air superiority fighter, the B–1 advanced bomber seems to be getting off the ground at last, and approval for such advanced programs as the airborne warning and control system (AWACS) and a light intratheater transport (LIT) seems favorable.

All of these types, whether in production, test, development, or the exploratory stage, will make greater demands upon you than anything within previous experience. These aircraft will be either faster, higher flying, longer ranged, increased in carrying capacity, operating in extremes of environment, extremely maneuverable, or any combination of these. The engines, similarly, will operate in a wide variety of pressure, temperature and altitude regimes.

So it is quite obvious that considerations of fracture and fatigue will be increasingly more vital. In that connection, Air Force Systems Command is charged with implementing Aircraft Structural Integrity Program requirements as an integral part of the total weapon system research and development and acquisition cycle, from contract definition right through to final procurement.

In order to fulfill this responsibility, we will have to have a good deal of technological advancement in the areas of materials development, service loads, structural analysis, reliability, testing and nondestructive inspection, to name only a few.

So you see, your work is really cut out for you; you will certainly find no lack of challenge in the years ahead.

I would like to be able to assure you, then, that you will also find no lack of resources with which to meet that challenge. That, unfortunately, is not very likely to be the case. . . .

The causes for the present anti-military climate are numerous, divergent and, sometimes, only marginally related. Nonetheless, military and military-related activities present such a large and obvious target that all sorts of diverse dissatisfactions converge upon the man in uniform and all those in any way associated with him. This situation underlies a number of very curious ironies.

First, if nothing succeeds like success, success in the case of military research and development would appear to have succeeded a little too well. Certainly, a strong case can be made that the so-called "military/industrial complex" has helped the United States to survive, and to grow and prosper in a hostile world. But the very essence of art, it is said, is to hide the labor that went into its creation. So, having succeeded so well in countering every threat to our national security, we have perhaps made it seem that there *is* no threat, or that we are eternally immune from any external threats. Thus a large part of the American people would seem to feel that external pressures have been relieved, and they turn more attention to the internal pressures in our society.

. . . In the years when the people *were* very sensitive to the dangers of nuclear war, and of the threat from the USSR and China, our nuclear superiority was overwhelming. Technologically, we were far ahead of the Soviets, and Red China had no means of posing any threat to the United States.

So we have, as I say, perhaps succeeded too well. We made it seem almost too easy to be superior and safe. And just at the time when that safety and superiority are most threatened, some of the people seem to have turned their backs on the danger. . . .

U.S. Superiority Threatened

Dr. John S. Foster Jr., Director of Defense Research and Engineering, expressed a very possible outcome in a speech last summer. "Now here is my concern:" he said, "research and development funds may well be reduced and then confined for the foreseeable future to some lower level. This trend faces us just as the Soviet Union has pulled roughly even with the United States in the amount of effort put into defense-related research and development. Furthermore, the Soviet Union is increasing its efforts at a disturbing rate. Therefore, the United States in the future may well see superiority in defense technology pass to the Soviety Union."

As it developed, Dr. Foster was not whistling up phantoms. Later in his address, for example, he said, "A logical national decision would be to increase our research and development effort in order to continue our insurance against technological surprise. The new administration wants to do this. The President is requesting an increase in defense research and development of almost seven percent over last year, despite a two-billion dollar overall decrease in the Defense budget recommended by the previous administration."

That, of course, was encouraging. But the hope, as you are probably aware, did not live very long. First the military authorization bill was debated an unprecedented 10 weeks in the Senate—as against the usual 2 or 3 days of previous years. This, of course, was only for *authorization* not for the appropriation of any actual funds.

The House of Representatives moved a little more quickly and was somewhat more liberal with the figures. But, when the two houses received the compromise conference bill, research and development authorizations for the Services had been cut *11 percent below* the level requested by the Administration. In addition, Title II, Section 203, of the bill reads:

> **None of the funds authorized to be appropriated by this Act may be used to carry out any research project or study unless such project or study has a direct and apparent relationship to a specific military function or operation.**

That provision, I am afraid, is so open to divergent interpretation as to be, potentially, severely restricting. While it would seem to apply more to basic than applied research, it *could* very well result in limiting a good many of our research and development projects. It would be very interesting, in fact, to track back and see how many of today's operational or near operational developments originated in studies and projects that, at their inception, appeared to have very *little*, if any, direct military application.

In any event, we see that Dr. Foster's fears have been realized. Nor can we take any genuine comfort from the fact that, on the whole, the Congress dealt rather kindly with the military procurement authorizations. Many of the Senate votes, you will recall, were uncomfortably close. There is every indication that the years ahead will see the momentum build up. At the same time, we know with reasonable certainty that the Administration will be requesting a lower level of funding for defense. So the pressures for reduction will be coming from both the Executive *and* Legislative branches.

I can only promise you, then, that we all face some lean years in the foreseeable future. Yet our responsibilities will not diminish; if anything, they are increasing, and particularly in view of the pace at which the Soviets are pursuing technological progress.

. . . while we have an embarrassment of riches in approved programs, we are more than likely to suffer an embarrassment of poverty in the resources necessary to carry them out.

I think you can see, then, what the climate is today, and what it will most probably be for some time to come. The President has set the tone and supplied the dominant themes—decentralization of authority, more selectivity among technological possibilities, and better defined goals and priorities. He has pointed out a new way of doing business, but it is very clear that both he and the Congress expect it to be done with less money.

Secretary Laird, his deputy, Mr. Packard, and Dr. Foster have pledged, in turn, that there will definitely be less risk-taking in the acquisition and production of major systems, and that development and production will be decoupled, with meaningful milestone decision points acting as the buffers.

Minimize Risks

This means that risk-taking on large systems and large expenditures is going to be at a minimum. The base line of exploratory development—even though 6 to 15 years from initial inventory—is going to have to be narrowed. In advanced development, we will be called upon to demonstrate *feasibility* of certain subsystems to a much greater degree than ever before, in order to reduce the risks on systems that may take advantage of such technology. Each of these "high order" demonstrations, in turn, will consequently require more resources than we might normally expect to apply to an advanced development program. We know, therefore, that few items will be able to reach the demonstration stage.

As far as the laboratories are concerned, I feel that our Technology Needs Program, and our greater emphasis on sound mission and system analyses, will help us to achieve the long-range foresight that will be necessary to put our diminishing resources on the right items.

Those of you in the laboratories—whether our own Air Force laboratories or those university and commercial facilities with which we contract—obviously have your work cut out for you. *Realism, selectivity, feasibility*—these are the characteristics of the operative environment for some time to come.

My long years in the management of military research and development have convinced me completely of the necessity and value of the laboratories; they have impressed me with the caliber of the people and the superb quality of the work; and, above all, they make me wish that I could give free rein to the creative and innovative spirits that have made our laboratories great.

Unfortunately, for the many reasons I have outlined, this is not possible. Along with the scientific and engineering disciplines in which each of you works, there is now the added discipline of increasingly limited means. I would ask, therefore, specifically of those of you in the Air Force Systems Command laboratories, that you enter into a broadened and continuing dialogue with the systems divisions—Aeronautical Systems Division, Electronic Systems Division, and the Space and Missile Systems Organization—and especially with the system program offices. Again, your relationship must be carried out in terms of realism and selectivity.

There is also a need, as you are probably aware, to be especially articulate in communicating with the program managers—in justifying your projects and the need for them. After all, they are faced with a very definite ceiling on expenditures, and in this climate of realism and selectivity you might naturally expect them to place more value on the "bird in hand" than those "in the bush." The burden, then, is upon *you*, to *convince* them that you offer something measurably superior to what is already in hand. This is no small burden, because without the ability to be convincing in this respect, the very genuine value of your basic work might be only academic.

In summary, the future promises to be difficult. Our potential adversaries are pushing on all the frontiers of technology. We cannot safely do less, and yet we must achieve our technological goals with less in the way of money, manpower and facilities. This is the ultimate challenge to our ingenuity, our creativeness, our sense of realism, and our managerial competence.

One thing we can clearly predict: with the smaller force structure we know is ahead, and with all resources limited, each of our aircraft will have to be better, more capable, stronger, more durable and, preferably less costly. That is a huge order. . . .

Value Engineering Contract Clauses

Excerpt from address by Emanuel Kintisch, Chief, Procurement Management Review Division, Office of Asst. Secretary of the Army (Installations & Logistics), at the Government-Industry Value Engineering Seminar, Gaithersburg, Md., Dec. 8, 1969.

* * * * *

It is my purpose to tell you about the coverage of value engineering in the Armed Services Procurement Regulation (ASPR), and to offer some advice and guidance in your application of the ASPR coverage for our mutual benefit—you, the contractor, and we, the Government.

. . . Let us, then, together skim through the provisions of Part 17, Section I, of the ASPR, highlight the more significant areas, and look at examples of their use. I will start by describing "value engineering" in the language of the ASPR:

> **"Value engineering is concerned with the elimination or modification of anything that contributes to the cost of a contract item or task but is not necessary for needed performance, quality, maintainability, reliability, or interchangeability. Specifically, value engineering as contemplated by this Part constitutes a systematic and creative effort, not required by any other provision of the contract, directed toward analyzing each contract item or task to ensure that its essential function is provided at the lowest over-all cost. Over-all cost may include, but need not be limited to, the costs of acquiring, operating, and logistically supporting an item or system."**

All contracts, including letter contracts, of sufficient size and duration to offer reasonable likelihood for cost reduction, are required to have Value Engineering clauses. These clauses offer a share in the savings resulting from properly documented cost reduction proposals submitted under a contract, even though they do not result from formal value engineering efforts. There are two kinds of clauses which deal with value engineering efforts by contractors: the Incentive clause and the Program Requirements clause.

The contractor is under no obligation to engage in value engineering efforts under the Incentive clause and he does not receive any benefits until he submits a proposal and it is ac-

Emanuel Kintisch is Chief, Procurement Management Review Division, in the Office of the Assistant Secretary of the Army (Installations and Logistics), responsible for the Department of the Army procurement management review program. He is also the Army member of the DOD Value Engineering Council, the DOD Quality and Reliability Assurance Council, and the Defense Procurement Career Management Board. Mr. Kintisch has served as attorney and procurement expert with the Army since 1942. He holds a B.S. degree from New York University and an L.L.B. from the New York University School of Law.

cepted. But the Program Requirements clause requires that he will engage in value engineering efforts to the extent stipulated as a line item in the contract schedule, for which he will be paid his costs to the extent of the line item price and additional incentive benefits stipulated in the clause.

The first important thing to note is that if there is no contract there can be no value engineering change proposal; and without such a proposal there can be no contractual sharing of benefits. Let me hasten to add that cost reduction proposals can be submitted as unsolicited proposals, which have to be treated on a case-by-case basis. ASPR Part 17 value engineering procedures and clauses do not apply in such cases.

Obligations and Rights

The next thing to note is that when a contractor submits a proposal under either contract clause, he has certain obligations and certain rights. Among his obligations, he is required to describe his proposal in writing in sufficient detail to permit intelligent review, technically and financially. The writing can be in any form or format which will accomplish the purpose, but it must state the minimum information set out in the clause:

- Description of the difference between existing requirements and the proposed change—with the comparative advantages of each.
- Statement of the contractual requirements to be changed and recommendation of the suggested revision.
- Estimate the reduction in performance costs, taking into account the contractor's costs of development and implementation.
- Estimate collateral savings.
- Statement of the time by which the change order adopting the proposal must be issued to obtain maximum cost reduction.
- Information on any previous submissions of the proposal and the actions by the Government thereon.

If technical data is submitted and the contractor wants to protect it from unauthorized use, he has to mark it in accordance with paragraph (h) of the clause. If he wants to assure its consideration in a timely manner, he should stipulate the period in which the Government must accept or reject the proposal.

On the other hand, the contractor acquires certain rights when he submits a value engineering change proposal. Among these are:

- Objective and expeditious consideration of the proposal by the Government.
- Prompt information on its disposition.
- Entry into a contract modification providing for a price adjustment following the sharing formula for instant contract savings, and for payments for future and collateral savings.

Objective: Cost Reduction

The objective of a value engineering incentive provision is to encourage the contractor to submit cost reduction proposals. To be acceptable, a value engineering change proposal must involve some change in the contract specifications, purchase description, or statement of work. This may include the elimination or modification of any requirements found to be in excess of actual needs in the areas of, for example, design, components, materials, material processes, tolerances, packaging requirements, technical data requirements, or testing procedures and requirements, and consequent reduction in the contract cost. Furthermore, even when the contract cost may be increased, the incentive provisions encourage contractors to submit value engineering change proposals that are likely to lead to overall savings resulting from significant net reductions in collateral costs of government-furnished property, operational requirement, or logistic support requirements.

The proposal can cover any contract requirement, even if it means termination, in whole or in part, of a contract line item. This is not generally understood. . . . in a cancellation of the whole requirement and the termination of the contract [resulting from a value engineering change proposal], the contractor [is] entitled to share the savings computed on the basis of the stipulated contract price.

. . . If he . . . were to propose that 9/10ths of [the items] be cancelled from his contract, he would be entitled to claim his share of the savings from a partial termination.

In the absence of a Value Engineering Incentive clause and proposals thereunder, the Government can terminate the contracts or reduce the contract amount, without any compensation to the contractor.

A Value Engineering Program Requirement clause obligates the contractor to engage in value engineering of the scope and at the level of effort required by the Government as an item of work in the contract schedule. In addition, the clause contains value engineering incentive features which provide for the contractor to share in savings resulting from the acceptance of any value engineering change proposals, whether or not such proposals result from the value engineering program requirement (except when the contract also includes the Incentive clause).

The principal reason for requiring a value engineering program is to get early results, *i.e.*, in the initial stages of design, development, or production, so that specifications, drawings, and production methods will reflect the full benefit of value engineering. The value engineering program requirement, which is set forth in the contract schedule as a line item and separately priced, may apply to all or selected phases of contract performance, and should be tailored to the particular contract situation.

A Value Engineering Incentive clause is required to be included in all contracts, advertised and negotiated, over $100,000, with certain exceptions, and may be included in contracts of $100,000 or less at the discretion of the contracting officer. In my opinion, a contractor would be wise to ask for a Value Engineering Incentive clause to be incorporated in his contract even if there is no potential for savings in that particular contract, but where there may be potential for savings in future contracts or savings in collateral areas: reduced cost of government-furnished property, operational requirements, or logistic support requirements.

While it is Defense Department policy to include Value Engineering clauses—and generally they are—the alert contractor will assure that a

Value Engineering clause is included in every contract where it is not prohibited by ASPR and where it may do him some good; and he will question any discretionary exclusion of such a clause. The validity of this advice is evidenced by the fact that the employment of value engineering in defense contracting is and ought to be understood to be a potential for additional business for the contractor. ASPR makes this crystal clear in a short sentence which reads:

> **"The sharing of cost savings with a contractor under a value engineering incentive or program arrangement constitutes payment for services rendered and does not constitute profit or fee for purposes of the statutory limitations imposed by 10 U.S.C. 2306(d)."**

A related bit of advice is this: Start thinking in terms of value engineering as early in the procurement process as you can. Once you succeed in getting a contract with a Value Engineering Incentive clause, spend some time on value engineering in your production planning. This will give you the opportunity to submit proposals for changes early and to have them apply to as large a part of the production quantity as you can, thereby maximizing the base on which incentive sharing can apply.

Types of Savings

There are three types of savings in which the contractor can share under a Value Engineering clause. These are savings realized on the instant contract, on future acquisitions within a specified period of time, and in the area of reduced collateral costs.

"Instant contract" means the contract as it exists at the time of the acceptance of a proposal—increases in quantity by additional buys or by exercise of options are treated as "future acquisitions" for which the sharing is at a lower rate. The gross savings which result from a value engineering change proposal are subject to being reduced by the costs of developing the proposal, and the costs of implementing the proposal to arrive at the net savings to be shared by the contractor and the Government. The contractor's cost of developing the proposal, if they are properly direct charges to the contract, are deductible to the extent that the development costs have been incurred after the specific value engineering project has been identified. It should also be remembered that developmental and implementing costs of subcontractors and the cost reduction sharing portions of subcontractors, which pertain to the proposal, are treated as part of the contractor's costs for the purpose of computing equitable adjustments of prime contract prices.

Documentation Is Important

Here is where documentation is important. An audit trail has to be established so that the costs thereafter incurred can be charged to the value engineering project. This is no more than good cost accounting practices dictate, where costs are allocated to designated cost centers. Implementation costs are considered to be those costs of incorporating a change, which are incurred after the value engineering proposal has been accepted by the contractor.

"Future acquisitions" for which savings are also to be shared are all those which follow the acceptance of a proposal for a stipulated time of from one to three years. Payments to the contractor on account of those savings can be made in a "lump sum" where the future requirements can be realistically estimated on some firm basis, or in royalty payments, based on actual buys during the stipulated period.

"Collateral savings" are any ascertainable net reduction in the Government's overall projected costs including but not limited to cost of operation, maintenance, logistic support, and government-furnished property. When such collateral savings result from the change proposal submitted by the contractor, he is entitled to participate in the savings.

Extent of Sharing

Generally, incentive clauses provide for the contractor's share of savings to be no less than 50 percent nor more than 75 percent of savings under the instant contract. It takes determination by the head of the purchasing office to go under 50 percent. While his determination is not appealable, it is at least arguable. You have the right to try to change his mind.

Savings on future acquisitions are shared with the contractor at 40 percent for a one-year period, 30 percent for a two-year period, and 20 percent for a three-year period. It also takes a determination by the purchasing office head to reduce those percentages in particular cases.

Sharing of collateral savings is limited to 10 percent of the projected savings, which it is estimated will accrue to the Government during an average or typical year's use of the item incorporating the change. However, when there are savings resulting from decreased use of government-furnished property, the contractor's share of the savings is the same as stipulated for instant contract savings.

Where a Program Requirements clause is involved. the contractor will be reimbursed for his cost of performance to the extent provided in the contract schedule. In addition, incentive sharings of cost reductions on the instant contract can be as much as 25 percent on fixed-price and incentive contracts and not over 10 percent on cost-plus-fixed-fee contracts. Sharings of future acquisition savings are limited to 10 percent to 20 percent on fixed-price and incentive contracts and 5 percent on cost-plus-fixed-fee contracts. Collateral savings can be shared in connection with a Program Requirement clause to the same extent as on the usual Value Engineering Incentive clause, *i.e.*, 10 percent of the savings based on an average or typical year's use of the item.

If your proposal involves a contract modification of more than $100,000, the certificate of current cost or pricing data required by law must be furnished.

The Defense Value Engineering Program's contractual requirements are set forth in the ASPR. I have described the most significant of these and recommend your reading them in full in the ASPR. These provisions are liberal in the sharing of savings with you. It will pay to study them in detail. Be alert for targets of opportunity to earn large value engineering dividends.

Weapon Systems for Tomorrow's Air Force

Major General Lee V. Gossick, USAF

Few elements of the Defense Department organization place such crucial dependence upon the nation's industrial community as does the Air Force Systems Command's Aeronautical Systems Division (ASD) in its day-to-day efforts to accomplish its military mission. Fundamentally, ASD is responsible for creating the aerospace weapon systems for tomorrow's Air Force. In pursuing this task, the division and its contractors address themselves to the whole range of conception, development, procurement and testing.

Within their purview are such diverse projects as aircraft, lubricants and survival equipment. To help meet the incredibly broad range of physical and intellectual problems in advancing the frontiers of technology, the division employs, or contracts for the services of, thousands of scholars, scientists, engineers, technicians, flyers, armorers, electronic and propulsion experts, as well as the management specialists needed to combine such seemingly unwieldy groups into purposeful and effective teams.

Currently, the division annually awards about 6,500 contracts to the aerospace industry—companies both large and small. These contracts total more than $6 billion, and represent more than half of the Air Force Systems Command's (AFSC) annual budget.

Headquartered at Wright-Patterson AFB, Ohio, ASD employs 6,600 people. Its facilities occupy some 2,500 acres and have a replacement value of $82 million. On the base there are, also, flight test facilities and six AFSC laboratories, covering the areas of aeromedicine, avionics, materials, flight dynamics, propulsion, and human resources.

What was to become the Aeronautical Systems Division began at Wright-Patterson AFB with the official creation of the U.S. Air Force in 1947. Soon thereafter, certain functions of the Air Materiel Command were assigned to the Air Research and Development Command and the Wright Air Development Center (later the Wright Air Development Division). Important additions and reorganizations during the next decade refined the structure to meet changing concepts of management and organization based upon the emerging weapon system concept.

In 1961, a major addition to AFSC's mission caused a large-scale change in the logistic and development functions of the Air Force. The former Air Materiel Command relinquished responsibility for the procurement of weapon systems, and became the Air Force Logistics Command. Simultaneously, the Air Research and Development Command assumed that responsibility and became the Air Force Systems Command. At Wright-Patterson, the amalgamation of procurement and development responsibilities led to the formation of the

Major General Lee V. Gossick, USAF, has been Commander, Aeronautical Systems Division, AFSC, since August 1969. He was assigned to ASD in 1967 first as Deputy for the F–111 Program and, in December 1968, became Vice Commander. From 1964 to 1967, General Gossick was Commander, Arnold Engineering Development Center, Tullahoma, Tenn. Prior to that he served in Headquarters, U. S. Air Force, where he held several positions in development and engineering areas. General Gossick holds B.S. and M.S. degrees in aeronautical engineering from Ohio State University.

AFSC Aeronautical Systems Division from the Wright Air Development Division.

Current Organization

Following World War II, the separate project offices, established to manage different aspects of a program, were unified into joint project offices to concentrate the managerial and engineering skills required for such complex programs as the B–52, the century-series fighters, and the X–15. By the early 1960s, these offices evolved into weapon system project offices; a few became full-fledged *system* program offices for directing work on systems such as the XB–70 and the X–20 aerospace vehicle.

At present the function of the division is divided among 14 deputies and additional directorates and system program offices (SPOs). These are the basic units of management in which all of the Air Force work on a particular weapon system is centralized.

The Development Planning Deputate is the heart and core of what is known as the "Advocacy Team" for aeronautical systems. They design the system; develop the rationale for its entry into the future force structure; make the initial cost estimate and demonstrate, through analysis and simulation, that the system will be effective in its projected employment and deployment in the anticipated threat environment.

SPOs often are formed as cadres within the Development Planning Deputate. Upon approval of the systems for acquisition or for contract definition, the SPO transfers to the Systems Management Deputate.

In certain instances, due to the size, priority and importance of a system, a SPO is established as a separate entity reporting directly to the Commander, Aeronautical Systems Division, or to the Commander, Air Force Systems Command.

The C–5 and F–111 are major programs on which the respective SPOs are presently reporting to ASD's commander. The F–15 program, on the other hand, is under direct management control of AFSC headquarters which has assumed functions and responsibilities, previously assigned to the program element monitor on the Air Staff of Headquarters, U.S. Air Force. At the same time, the F–15 system program director, who formerly reported to the Commander, ASD, now reports directly to the AFSC commander. Technical, engineering and staff support, however, still is provided by ASD.

The system program offices direct the development of the weapon system from its inception as a program to turnover to the operational command. This management responsibility includes all aspects of the program, from the training of personnel to the procurement of initial spare parts. They act as the Air Force control points for industrial and military relationships essential to the development of strategic and tactical systems. By fostering an atmosphere of initiative and creativity, the SPOs concentrate the broad general knowledge and the modern managerial competence essential to the development of future weapons.

The Deputy for Systems Management is responsible for directing and managing system acquisition programs. Just one of these, the Combat SPO, directs more than 20 different USAF weapon system programs and projects, mainly in support of operations in Southeast Asia. Within the Combat SPO, with its managers, specialists, buyers, and others, are five divisions whose efforts concentrate on such matters as guided bombs, missiles, and helicopters.

The Deputy for Subsystems Management contracts for more than $1.5 billion in goods, services and equipment each year. This activity alone now involves some 850 contractors with 2,400 active contracts, totaling more than $5 billion. Ground equipment, propulsion subsystems, jet fuel starters, ejection seats and life support equipment represent some of the specific items involved.

Most of AFSC's limited war and special air warfare programs, including appropriate aircraft, aerodynamic equipment and air mobility programs, come under the aegis of the ASD Tactical Warfare Deputate. However, some of the division's limited war efforts are also conducted by another of the elements, the Reconnaissance and Electronic Warfare Deputate. This office provides the coordination point for all aeronautical reconnaissance projects and manages procurement of photographic and electronic reconnaissance, mapping, charting and geodetic subsystems, as well as ground-based cameras, optics, mounts, illuminants and many other associated items including lasers, infrared and radar subsystems.

An ASD in-house systems engineering capability, unique in the Air Force, is provided by the Deputy for Engineering. This deputate provides a technical bridge between the laboratories and the program offices, assuring relevant and timely responses at all stages of system development. Staffed with highly qualified engineers and technical experts, the Engineering Deputate advises the entire division on development problems, beginning with the conceptual phases and continuing through in-service engineering. It also provides systems engineering services to other elements of AFSC and to other DOD agencies.

Criteria and Needs

In the next decade, the Air Force must have advanced weapon systems that will enable the nation to fight at any level of warfare. Options must be available to meet a wide range of contingencies: to retaliate if necessary; to deliver a first or second strike; and to reach all kinds of targets under extreme conditions of weather, terrain and hostile action. Intelligence collection and analysis, and command and control techniques, must be accurate and reliable to an exacting degree. Underlying all such considerations is the realization that specific requirements will change, that optimum weapon systems must be flexible, and that they must have the potential for growth. ASD has the obligation to meet these future needs.

Diversity for specific missions is mandatory. While aircraft and missiles must fly faster, farther and higher to meet certain mission requirements, it also is necessary for aircraft to fly low and slow and have the capability for long-loiter time in the target area for tactical exercises in support of ground forces. All must fly more accurately and be able to survive and penetrate potential defenses. In addition, the complete weapon system must become operational within cost limits that are reasonable when measured against national needs. Although it is axiomatic that modern weaponry is increasingly complex, that very complexity must not reduce reliability, nor increase maintenance costs, nor waste valuable time, talent and supplies.

Originating New Weapons Systems

An important aspect of ASD's mission involves the origination of new weapon systems. To a notable extent, the impetus for such new systems stems from actual or predicted new threats to national security, or from changes in our own national political and military policies.

For example, several years ago, when a change in the world situation reduced the likelihood of nuclear warfare, the United States immediately needed a new capability for rapid, worldwide deployment of large forces. Furthermore, our national obligation to support collective security arrangements meant we would need to maintain large, expensive garrisons in many remote areas for indefinite lengths of time, *or* be able to get them there the moment trouble threatened. To help resolve this problem, ASD with the support of its industrial contractors began creating large, speedy long-range transports: complete systems capable of shifting troops rapidly to any troubled area and disengaging them after the threat had waned.

The result has been the C–141 and the C–5 transports, and the former has played an indispensable role in the Vietnam conflict. While the C–141 program for the most part has used technology completely tested and capable of immediate application, the C–5 has demanded new technical capabilities to overcome problems inherent in its size and propulsion needs. Nevertheless, the C–5 is already beginning to prove itself in test programs, having flown at a maximum gross weight of nearly 400 tons —more than twice that of the C–141.

So many different factors, ranging from cost and funding to the climate of international affairs, affect the creation of new aerospace systems, making predictions for the future risky. Nevertheless, industrial leaders need to know some of the likely directions which their work with ASD may take.

In the Future

One of the proposed systems which the division may procure in the future is the AX close-support fighter, involving subsonic designs. In December 1969 McDonnell Douglas Corp. was selected as the prime contractor for the F–15 tactical aircraft, an extremely fast, sophisticated, highly maneuverable air superiority fighter incorporating the latest avionics, fire control and propulsion systems. When the F–15 becomes operational, it must be able to counteract the most serious enemy threats envisioned for the mid-1970 period.

The whole vista of tactical missiles —air-to-air types for air superiority and air-to-surface missiles for close support and interdiction missions— are of constant concern to ASD.

Tactical electronic warfare systems are being studied comprehensively in order to identify practical and helpful concepts. The primary objective is to support aircraft attacking ground targets; but tactical electronic warfare also strives to defend that aircraft against attack, jamming radar, and analyzing enemy signals to determine the nature of the penetration environment.

Another area of marked interest is the design of support aircraft, such as the light intratheater transport (LIT), which may incorporate vertical or short takeoff and landing capabilities. Being sought is the type of aircraft that will facilitate the movement of troops and supplies into combat areas. Practical applications in the future should enable the Air Force to perform its logistic functions by flying directly into combat areas without preparing landing strips or pads, a capability that is particularly desirable in limited warfare situations.

ASD also plays a significant role in developing and maintaining strategic capabilities. Current emphasis on limited war has not deterred the division from proposing strategic aircraft to replace the reliable B–52. A current proposal is for an advanced manned strategic aircraft (AMSA), designated the B–1. In concept, the B–1, like the versatile B–52, could be applied not only in general war but also in certain limited war situations. It is an outgrowth of studies, conducted during the early 1960s, which identified a need for low-level penetration at supersonic speeds. Here again, advances in technology are required to achieve the necessary ranges, and to meet the required take-off and landing capabilities. Planners are drawing strongly on recent developments in avionics and propulsion subsystems, and materials and structural technology for the airframe and the variable sweep wings.

To make the strategic systems even more flexible, concepts of advanced tankers are currently under consideration. In the interim, the KC–135 tanker has been improved sufficiently for current needs, but the Air Force will require tankers with greater range and greater transfer capacities in the near future.

Development of the B–1 system, advanced tankers, new aerodynamic missiles and decoys, electronic aids for protection and penetration, and other related creations will provide the United States greater retaliatory and deterrent power for the 1970s. In an age of nuclear weaponry, aircraft continue to prove their effectiveness, in actual combat and in forcing present and potential adversaries to avoid rash actions in light of their probable consequences.

The Aeronautical Systems Division, with its extensive industrial support, seeks to apply imagination, planning and sound management to meet those goals that will assure the United States the air superiority essential to its security and its role in world affairs.

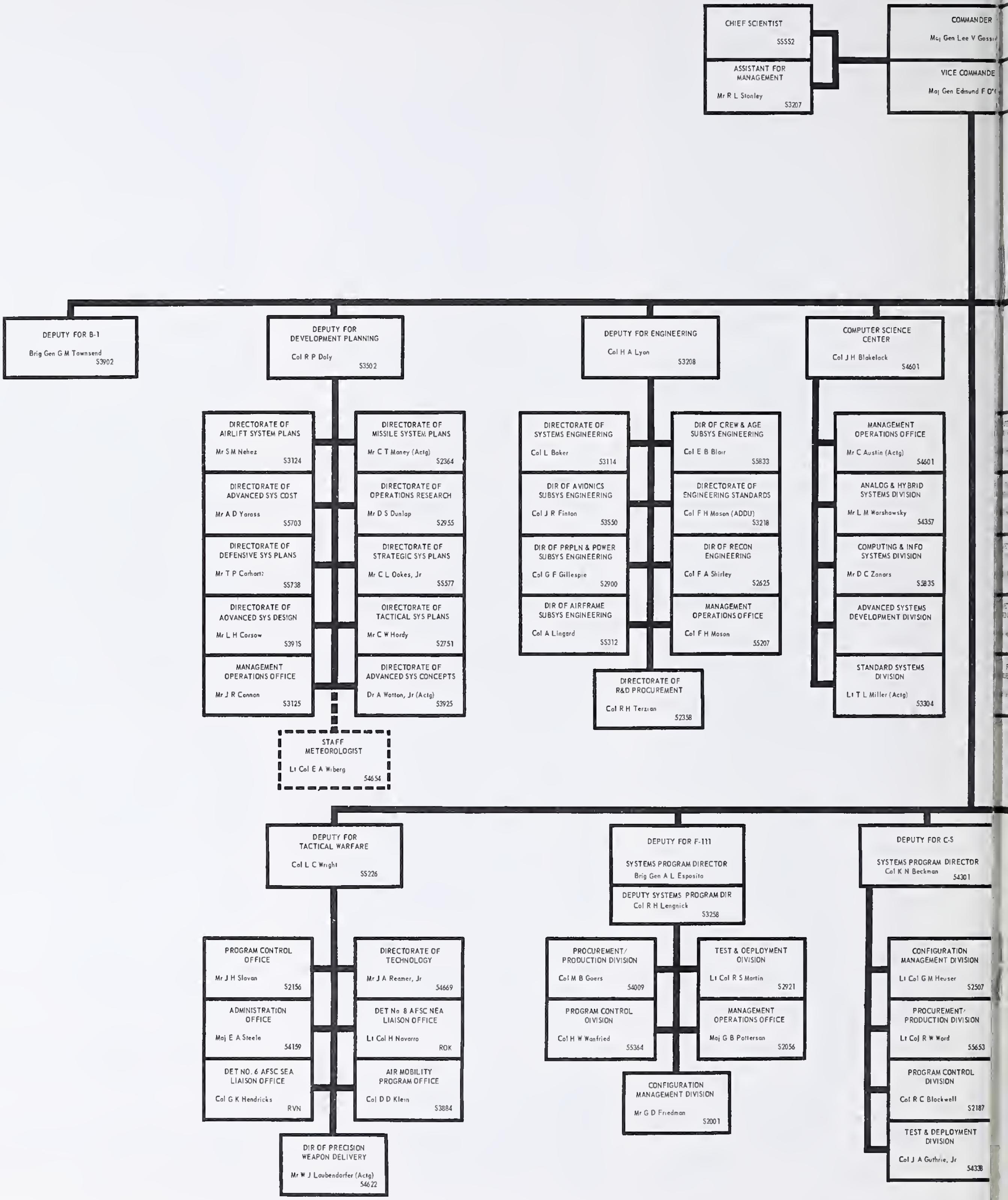
First Operational C–5 Delivered

The first operational C–5 aircraft was delivered to the Air Force Military Airlift Command on Dec. 17, 1969.

Four C–5s are being flight tested at Edwards AFB, Calif.; one at Pope AFB, N.C.; and three at the Lockheed-Georgia Co. plant.

AERONAUTICA

WRIGHT-PATTERSON AFB, OHIO 4543

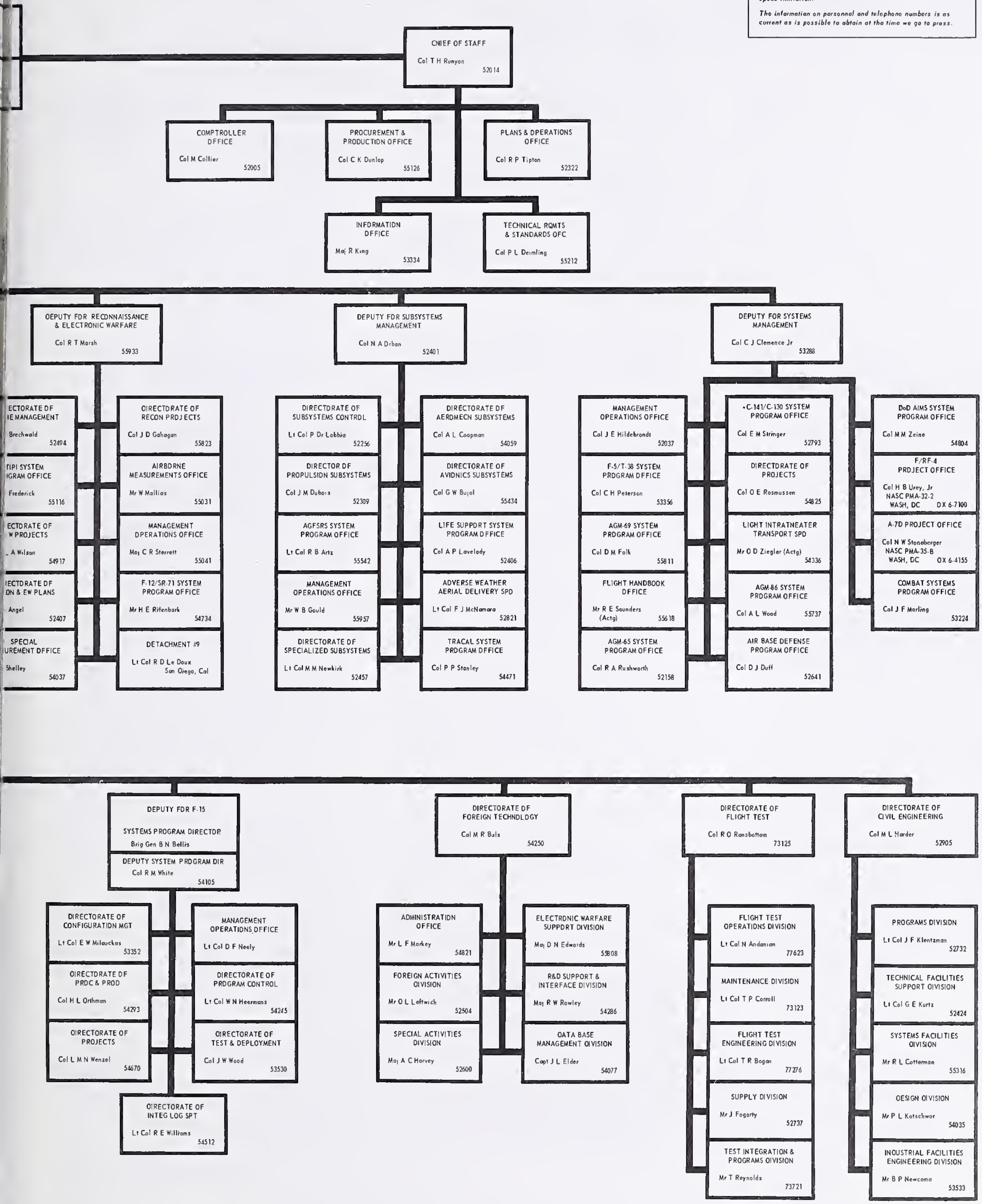


YSTEMS DIVISION

Phone (513) 257-1110

Editor's Note: Organization charts appearing in the Bulletin are edited by the editorial staff to reflect those elements of the various DoD organizations which are of interest to industry representatives. Organizational elements not involved in the DoD-industry relationship have been eliminated because of space limitation.

The information on personnel and telephone numbers is as current as is possible to obtain at the time we go to press.



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- PROCUREMENT & PRODUCTION OFFICE — Col C K Dunlop 55126
- PLANS & OPERATIONS OFFICE — Col R P Tipton 52322
- INFORMATION OFFICE — Maj R King 53334
- TECHNICAL RQMTS & STANDARDS OFC — Col P L Deimling 55212

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- TIPI SYSTEM IGRAM OFFICE — Frederick 55116
- ECTORATE OF W PROJECTS — A Wilson 54917
- ECTORATE OF ON & EW PLANS — Angel 52407
- SPECIAL UREMENT OFFICE — Shelley 54037
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- AIRBORNE MEASUREMENTS OFFICE — Mr W Mallias 55031
- MANAGEMENT OPERATIONS OFFICE — Maj C R Sterrett 55041
- F-12/SR-71 SYSTEM PROGRAM OFFICE — Mr H E Rifenbark 54734
- DETACHMENT #9 — Lt Col R D Le Doux, San Diego, Cal

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- DIRECTORATE OF AVIONICS SUBSYSTEMS — Col G W Bujol 55434
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- ADVERSE WEATHER AERIAL DELIVERY SPD — Lt Col F J McNamara 52821
- TRACAL SYSTEM PROGRAM OFFICE — Col P P Stanley 54471

DEPUTY FOR SYSTEMS MANAGEMENT
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- MANAGEMENT OPERATIONS OFFICE — Col J E Hildebrandt 52037
- F-5/T-38 SYSTEM PROGRAM OFFICE — Col C H Peterson 53356
- AGM-69 SYSTEM PROGRAM OFFICE — Col D M Folk 55811
- FLIGHT HANDBOOK OFFICE — Mr R E Saunders (Actg) 55618
- AGM-65 SYSTEM PROGRAM OFFICE — Col R A Rushworth 52158
- •C-141/C-130 SYSTEM PROGRAM OFFICE — Col E M Stringer 52793
- DIRECTORATE OF PROJECTS — Col O E Rosmussen 54825
- LIGHT INTRATHEATER TRANSPORT SPD — Mr O D Ziegler (Actg) 54336
- AGM-86 SYSTEM PROGRAM OFFICE — Col A L Wood 55737
- AIR BASE DEFENSE PROGRAM OFFICE — Col D J Duff 52641
- DoD AIMS SYSTEM PROGRAM OFFICE — Col M M Zeine 54804
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- A-7D PROJECT OFFICE — Col N W Stonaberger, NASC PMA-35-B, WASH, DC OX 6-4155
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DEPUTY SYSTEM PROGRAM DIR — Col R M White 54105

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- FLIGHT TEST ENGINEERING DIVISION — Lt Col T R Bogan 77276
- SUPPLY DIVISION — Mr J Fogarty 52737
- TEST INTEGRATION & PROGRAMS DIVISION — Mr T Reynolds 73721

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- SYSTEMS FACILITIES DIVISION — Mr R L Catterman 55316
- DESIGN DIVISION — Mr P L Kotschwar 54035
- INDUSTRIAL FACILITIES ENGINEERING DIVISION — Mr B P Newcoma 53533

ABOUT PEOPLE

DEPARTMENT OF DEFENSE

Dr. Gardiner L. Tucker, who has been serving as Principal Dep. Dir., Defense Research and Engineering, has been appointed to the position of Asst. Secretary of Defense (Systems Analysis). He succeeds **Dr. Ivan Selin** who has been Acting Asst. Secretary for Systems Analysis and resigned at the end of January.

Richard G. Capen Jr., formerly the Principal Dep. Asst. Secretary of Defense (Public Affairs), has been appointed Asst. to the Secretary of Defense (Legislative Affairs). **Jerry W. Friedheim**, who has been Dep. Asst. Secretary of Defense (Public Affairs) since March 1969, has succeeded Mr. Capen as Principal Deputy.

Col. Elmer D. Howk, USAF, is the new Dep. Commander, Defense Logistics Services Center (Defense Supply Agency), Battle Creek, Mich.

DEPARTMENT OF THE ARMY

Robert L. Johnson has been appointed Asst. Secretary of the Army (Research & Development). Prior to his appointment, Mr. Johnson was vice president in charge of the Manned Orbiting Laboratory Program in the Missiles and Space Systems Division of McDonnell Douglas Corp. He has had 23 years experience as an industrial design engineer and executive. **Charles L. Poor**, who has been Acting Asst. Secretary, has returned to his responsibilities as Dep. Asst. Secretary of the Army (Research & Development).

Maj. Gen. Erwin M. Graham Jr., who has been Commander, Army Ammunition Procurement Supply Agency, Joliet, Ill., since June 1968, assumed command of the Army Munitions Command, Dover, N. J., on Feb. 1. He succeeded **Maj. Gen. Frank C. White** who retired from active service.

Brig. Gen. Frank A. Hinrichs has been designated Dir., Procurement and Production, Hq., Army Materiel Command. He succeeds **Brig. Gen. Michael E. Leeper** who has become the command's Dir., International Logistics.

Brig. Gen. Ross R. Condit Jr. has been assigned as Commander of the Combat Service Support Group, Army Combat Developments Command, located at Ft. Lee, Va.; and **Col. George E. Wear** is the new commander of the Combat Developments Command's Infantry Agency.

The former Chief of the Microbiology Div., Natick (Mass.) Laboratories, **Dr. Hamed M. El-Bisi**, has moved to Headquarters, Army Material Command, as Chief, Science and Technology Div., Directorate of Development and Engineering.

Brig. Gen. Spurgeon H. Neel Jr. is now Dep. Surgeon General of the Army.

Col. Robert M. Pearce is now Dep. Commander for Land Combat Systems, Army Missile Command, Redstone Arsenal, Ala. He succeeds **Col. Cyril D. Sterner** who retired.

Col. William D. Canfield is the new commander of the Army Communications Systems Agency, Ft. Monmouth, N. J.; and **Col. John W. Oliver**, USAF, has been assigned as Chief of the Defense Communications Agency's Satellite Communications Field Office, collocated with the Army Satellite Communications Agency at Ft. Monmouth.

New assignments announced by the Corps of Engineers are: **Col. Richard F. McAdoo**, Executive to the Chief of Engineers; and **Col. James E. Bunch**, District Engineer, Rock Island, Ill.

DEPARTMENT OF THE NAVY

RAdm. John E. Dacey, formerly Anti-Ship Missile Defense Program Coordinator in the Office of the Chief of Naval Operations, has been designated Asst. Dep. Chief of Naval Operations (Fleet Operations and Readiness).

RAdm. Harvey P. Lanham has been assigned to the position of Dir., Logistic Plans Div., Office of the Chief of Naval Operations.

Capt. George L. Dickey Jr. has been named Navy Dep. to the Dir., Advanced Ballistic Reentry Systems Program, Ballistic Systems Div., Norton AFB, Calif.

New Dep. Commander, Atlantic Div., Naval Facilities Engineering Command, Norfolk ,Va., is **Capt. John F. Beaver.**

Capt. Kenneth E. Wilson Jr. assumed command of the Pearl Harbor Naval Shipyard on Jan. 30.

DEPARTMENT OF THE AIR FORCE

The Air Force has announced the retirement of the following general officers: **Lt. Gen Arthur C. Agan**, Commander, Aerospace Defense Command, Ent AFB, Colo., effective March 1; **Lt. Gen. Benjamin O. Davis Jr.**, Dep. Commander in Chief, U. S. Strike Command, and additional duty as Dep. U. S. Commander in Chief, Middle East, Southern Asia, and Africa South of the Sahara, MacDill AFB, Fla., effective Feb. 1; **Lt. Gen. Robert J. Friedman**, Vice Commander, Air Force Logistics Command, Wright-Patterson AFB, Ohio, effective Feb. 1; **Lt. Gen. James W. Wilson**, Vice Commander, Military Airlift Command, effective Feb. 1; and **Brig. Gen. John French**, Dep. Chief of Staff, Comptroller, Air Force Logistics Command, Wright-Patterson AFB, Ohio, effective Feb. 1. Replacements for these positions had not been announced at press time.

Jack L. Stempler, who has been Asst. to the Secretary of Defense (Legislative Affairs), has moved to the Department of the Air Force as General Counsel. He succeeds **John M. Steadman** who resigned.

Brig. Gen. Otis E. Winn, formerly Asst. to Dir. of Transportation, Office of Dep. Chief of Staff, Systems and Logistics, Hq., USAF, is now Dep. Commander for Resources and Management, Military Traffic Management and Terminal Services, Washington, D. C.

Industry Disaster Preparedness

John E. Davis

National preparedness for defense used to mean that America could preserve the peace or wage war successfully by maintaining a small military force and an industrial capability that could expand to meet the demands of war. In two world wars, this kind of preparedness did the job it was supposed to do because the U.S. mainland never was attacked and we had time to expand our military forces and our industrial capabilities. However, we no longer can be certain that the home front will not be a combat area at the beginning of a nuclear war. In the age of the nuclear warhead and the intercontinental ballistic missile, industry must be able to survive under direct attack and to resume the industrial processes that will put the nation on the road to recovery. In short, industry needs civil defense preparedness.

The dimensions of the nuclear threat—and the need for a national civil defense effort—are familiar to most managers of our defense industries. Although all of us concerned with the nation's defense must be encouraged by the strategic arms limitations talks (SALT), which are under way with the Soviet Union, some grimmer facts of international life persist and promise to be with us for sometime to come.

Thousands of nuclear weapons deployed throughout the world raise, if nothing else, the prospect of an accident or an accidental nuclear exchange. Red China is making a strenuous effort to become a major nuclear power. The technology of nuclear weapons continues to proliferate, and an epic technological struggle continues in the search for an ultimate weapon or defense system.

In this kind of world, civil defense is a major element in the national defense structure of the United States and of other major nations as well. The Soviet Union, for example, takes civil defense seriously. Civil defense training and education has been made mandatory at the secondary level in Soviet schools, and Soviet industry is assigned a large role in civil defense education and emergency operations.

The U.S. civil defense program has an extensive and complex mission laid down by Congress in the Federal Civil Defense Act of 1950. It embraces programs to educate and inform the individual citizen on the nuclear threat, and to provide him with fallout protection through a system of public shelters and home preparations. Other civil defense programs aim at every element of our society—governments at every level, school systems, agriculture and industry. The goal is to have our political, economic and social institutions build up a capability to survive a nuclear war.

Preparedness for nuclear disaster has an important corollary: it pays off in better capability to meet serious peacetime emergencies. Civil defense personnel, equipment and communications see frequent peacetime service in tornadoes, hurricanes, forest fires and floods, and in man-caused emergencies, including industrial accidents.

John E. Davis is Director of Civil Defense and head of the Office of Civil Defense in the Office of the Secretary of the Army, Washington, D. C. Before assuming this position in May 1969, Mr. Davis served two terms as Governor of North Dakota from 1956 to 1960, and was National Commander of The American Legion from 1966 to 1967. He is a graduate of the University of North Dakota with a degree in business administration.

Cooperation Necessary

Working with industry on the problem of survival in nuclear war is a major element of the Office of Civil Defense program, because close cooperation between industry and Government at all levels is essential to effective civil defense. Two reasons for this are immediately obvious.

The daily lives of 85 million Americans are bound up with their jobs in industry and business, where they are available for and receptive to training and education in civil defense protection measures. An essential civil defense objective can be attained if industry, in its normal training and education programs for safety and security, includes information bearing on nuclear war hazards and protective measures against them.

A second obvious reason for industrial civil defense preparedness is the fact that industry and business must now take steps, not simply to expand production, but steps to protect its management structure, work force and production processes against the effects of a nuclear attack.

A Company Plan

Emergency planning against nuclear attack is becoming standard practice in American industry.

A major oil company states its policy on emergency planning in this fashion: "The purpose of this Emergency Plan is to insure that reasonable measures are taken to provide for continuity of management, protection of personnel, safeguarding of property and the restoration of operations and services to enable the company to supply products, to meet military and civilian requirements in the event of enemy nuclear attack in order to assist the nation to survive, recover and win." Going further, this same company told a congressional committee that "It is the company's policy to cooperate fully with governmental authorities in implementing an effective program to provide for the safety of our citizens in the event of nuclear attack."

The starting point for industrial civil defense is a company plan setting forth measures for preserving the corporate structure and decision-making capability, protecting vital financial and production records and protecting its employees.

A typical company plan will contain provision for management succession —documents or organization chart which names alternates for management positions in the company to replace casualties, or those who are unable to reach an operations site.

An alternate company headquarters may be designated to house operations if the permanent headquarters is damaged or destroyed. Many large companies have established emergency headquarters with skeleton staffs, extensive communications capabilities, and provisions for "buttoned-up" operations under fallout conditions.

Alternate company headquarters may be the repository for duplicate sets of vital company records. An interesting offshoot of industrial records protection efforts are business enterprises which have built protected storage sites, and offer industry a duplication and storage service for vital company documents.

The shutdown procedures and other safety and security measures for peacetime emergencies may serve, with little adjustment, in a nuclear emergency plan to protect company property and equipment.

Employee Protection

The protection of employees against attack effects is the paramount step for civil defense preparedness.

When the company or business faces the problem of employee protection, it moves to the core of the national civil defense effort. Above all other considerations, the job of civil defense is to save lives. It is our only strategic defense program which is directly concerned with saving civilian lives. Defense Department studies show that the national shelter program, alone, would be responsible for saving millions of lives under conditions of nuclear attack. President Nixon has expressed his concern about the protection of our population in nuclear war, and has ordered a special study of the life-saving capabilities of a national shelter system.

The greatest benefit to the civil defense program results when industrial security personnel, as well as local civil defense officials, work together for the protection of people against nuclear attack.

Local Director's Tasks

The local director, if he participates in the Federal civil defense program (and more than 4,000 local jurisdictions do) has three major tasks:

- Establish a local system of public shelters.
- Create the organizational capability to coordinate rapidly the disaster-control efforts by all units in or readily available to local government.
- Educate and inform the citizens of his community on what to do and where to go to survive nuclear attack.

The basis for cooperation between industry and local civil defense on shelter is clear: a community shelter system means that employees of industry have fallout protection, with shelters provisioned with food, medical supplies and radiation protection equipment through Federal grants of shelter supplies to the nation's communities. Industry, on the other hand, can provide shelter in its physical plant because the heavily built structures of industry, almost invariably, have inherent shelter capability.

Industry has skilled volunteers in almost every field who can strengthen a local government civil defense staff, when it must be expanded for emergencies. Industrial safety personnel, trained in disaster control, have skills that civil defense operations demand. Workers with first aid training have a valuable civil defense skill. Civil defense officers also make available to industry medical self-help training, going beyond normal first aid to serve in situations where professional medical help may be unavailable for a considerable period of time. This situation could be commonplace in a population in shelter.

The public information and education mission laid down by the basic Federal civil defense law is probably the most formidable task facing civil defense. Survival instructions and information must compete for public attention with myriads of messages bearing more pleasant news, yet it must have significant impact and retention value for an entire population.

Industry has helped civil defense with this task in an outstanding manner. Civil defense publications have been distributed through industry's channels for informing its workers on safety and security. Industry has released its employees for civil defense training and education and has provided classroom space in its facilities. Management has motivated its employees to train for service in an emergency as shelter managers or radiological detection specialists. This is a field in which industry serves community interests as well as its own. Most, if not all communities, may need volunteers from local industry for these civil defense tasks.

Natural Disasters

The dual aspect of civil defense—the peacetime benefits that are gained from nuclear attack preparedness—should be self-evident. Every day, across the nation, local governments draw on personnel trained in civil defense and equipment and communications intended for nuclear emergency, to cope with a peacetime natural disaster or a man-caused catastrophe, such as an industrial accident. These occurrences frequently see industrial safety personnel and civil defense cooperating to contain disaster and save lives.

The destruction wrought by Hurricane Camille is still fresh in the minds of most Americans. Through civil defense preparedness, the toll of lives taken by that vicious storm was held to hundreds instead of thousands. Through industry and civil defense cooperation, and the cooperation of many other elements of government and the private sector, relief and recovery operations were given added impetus and speed.

Even more recently, civil defense facilities and personnel got a peacetime workout from the massive blizzard which hit New England during Christmas week 1969. State and local civil operating centers provided emergency communications and coordinated the efforts of relief agencies around the clock. These civil defense facilities were also centers for the release of press and public information bulletins.

When power lines were downed by the storm, civil defense emergency generators provided heat and power to nursing homes, hospitals and public shelters.

Storm conditions in New England were reported continuously to the Office of Civil Defense and the Army Operations Center in the Pentagon.

Preparedness Tested

Industrial safety engineers will recall the August 1965 explosion at Rubbertown, the huge industrial complex on the outskirts of Louisville, Ky. The disaster took 13 lives but disaster fighters—from both industry and government—contained the threat of secondary explosions, cooperated to evacuate the residents of several hundred homes near the explosion site, and set up the communications and command posts for the direction of operations. A factor contributing to the efficiency of the operation was a civil defense training exercise, involving industry and the Louisville-Jefferson County civil defense organization, which took place early in that year and set up conditions identical to those of the morning of August 26 when actual disaster struck. Communications, hospitals, alerting systems and governmental authority had all received a working test of readiness for an actual emergency. On a smaller scale, industry civil defense cooperation of this kind is almost a daily occurrence.

The Office of Civil Defense and the civil defense program exist to plan, organize, coordinate and finance civil government operations that contribute to attack preparedness. Government cannot cope with a nuclear emergency or natural disaster alone. The nation needs informed action by every citizen and every organized group to assure survival and recovery in nuclear war. Nuclear attack preparedness, in government, in industry, in school systems, and in the home provides people with life-saving information, and creates organizational skills for coping with emergencies and saving lives every day. This aspect of the national civil defense effort gives immediacy and even urgency to more widespread civil defense preparedness in industry and business.

SECURE CORPORATE ARCHIVES. In a former Pennsylvania limestone mine, 205 feet underground, Westinghouse Electric Corp. operates a records storage center.

Photo courtesy Westinghouse Electric Corp., Pittsburgh, Pa.

ASPR Committee Case Listing

The following is a listing (revised as of Dec. 8, 1969) of the cases currently under consideration by the Armed Services Procurement Regulation (ASPR) Committee, of the Office of the Assistant Secretary of Defense (Installations and Logistics).

On items marked by asterisks, the text has been omitted to shorten the listing. The asterisks denote actions taken as shown below:

**—Case closed, no ASPR revisions resulting.*

***—Case closed, approved for printing in a subsequent ASPR revision.*

****—Case closed, approved for printing subject to further government coordination.*

The listing includes subjects of interest to contractors but excludes cases of a minor or editorial nature, those considered "sensitive," and those involving a deviation from the regulation which are processed by the ASPR Committee.

The ASPR Committee meets with representatives of major industry associations periodically to explain the purpose and status of each of the cases under consideration, and to answer questions from industry representatives concerning the cases. All proposed ASPR changes of major policy are forwarded to industry associations in draft form for the review and comments of the association memberships. Industry comments are evaluated by the Defense Department before a final decison on the proposal is made by the ASPR Committee.

****Review of the Implementation of Public Law 87-653.**

* **Cost Information Reports(CIR).**

** **Rental Cost—ASPR 15-205.34.**

Communications Services. Development of uniform ASPR coverage which would permit deletion of existing departmental coverage with respect to procurement of communication services from both regulated and unregulated suppliers. Industry comments have been received, considered, and revised coverage developed. Comments from the Office of the Director, Telecommunications Management, and the Federal Communications Commission have been received and are under consideration.

Advance Understandings of Allowability, ASPR 15-107. To revise the existing ASPR paragraph to explicitly provide that such agreements must be in writing to be binding on the Government. Proposed ASPR coverage concerning Advance Understandings on Particular Cost Items was forwarded to industry for comment on May 29, 1968. Final action on this case had been deferred pending completion of the committee's consideration of the ASPR Corporate Administrative Contracting Officer Program case.

** **Technical Data Warranty Clause.**

Revisions to ASPR 15-205, Cost Principles on Bid and Proposal and Independent Research and Development. The proposed revisions to the existing ASPR cost principles on Independent Research and Development and Bid and Proposals were developed as a staff action outside of the ASPR Committee and referred to the committee for editing and the obtaining of industry comments. This material was forwarded to industry on Jan. 29, 1968. On March 25, 1968, the reporting date for submission of comments by industry and government agencies was extended to June 30, 1968. Industry comments have been received. The subject case is still under study.

Clauses for Service Contracts. To develop a new Part for ASPR Section VII to cover service contracts generally, incorporating by reference, to the extent feasible, the fixed-price and cost-reimbursement clauses contained in Parts 1 and 2 of Section VII. This matter is still under development.

** **First Article Approval.**

* **Revision of the CWAS Coverage.**

Proposed ASPR 9-203(f) Clause, Rights in Technical Data—For RDT&E and Acquisition Contracts for Major Systems and Subsystems. To consider modifying the ASPR policy concerning rights in technical data insofar as research, development, test and evaluation (RDT&E) and acquisition contracts for major systems and subsystems are concerned, by prescribing a special clause for inclusion in prime major systems and prime subsystems RDT&E contracts which would require the contractor to permit subcontractors to sell subcontractor-fabricated parts or services directly to the Government without the payment of license fees or other inhibition, notwithstanding that such subcontractor effort may require the use of limited rights data furnished by the prime contractor. Consideration of the coverage in this area was delayed awaiting receipt of comments from CODSIA. This matter is now under consideration by higher authority.

Mandatory Application of ASPR Cost Principles in Fixed-Price Contracts. To develop a revision of ASPR Section XV to make use of the cost principles set forth in Parts 2, 3 and 4 mandatory in fixed-price contracts whenever costs are relevant in the pricing of fixed-price contracts. A draft of the proposed coverage to accomplish the foregoing was forwarded to industry for comment on May 14, 1969. Industry comments have been received and considered. This matter is now under consideration by higher authority.

* **Title and Risk of Loss Clause—ASPR 7-103.6—Applicability to Cost Reimbursement Type Contracts.**

** **Definitization Clause for Letter Contracts.**

** **ASPR 14-406, Nonconforming Supplies and Services.**

** **Amendment of Certain ASPR Provisions Relating to Patents and Data.**

Delinquent Delivery Schedules on Other Than Cost-Reimbursement Type Supply and Service Contracts. To modify various provisions of Section VIII, Part 6, to clarify the rights and obligations of both parties in the event of delinquent performance. The proposed revisions were forwarded to industry for comment on March 3, 1969. Industry comments have been received. This matter is still under consideration.

** **Review of Bid Protest Regulations.**

** **Proposed Revision to ASPR 15–203 Regarding Off-Site Burden Rates.**

** **Application of Burden to Settlement Expenses and Settlements With Subcontractors.**

** **Accounting and Control for Government-Owned Property.**

Transfer of Materials between Contracts. This case addresses itself to a proposal to permit easier transfer of material between contracts, and to permit retention by contractors of excess, contractor-acquired, government-owned material at the lesser of cost or market, and was submitted to the industry associations on Feb. 13, 1969, for comment. Comments have been received. This matter is still being considered.

** **CODSIA Termination Recommendations.**

Termination—Deferring Determination Whether for Default or Convenience Clause. To consider whether an ASPR clause embodying the subject concept should be developed for inclusion in the regulation. Such a clause, half-way between the present ASPR Default clause and the present ASPR Termination for Convenience of the Government clause would permit termination of a contract while deferring the contracting officer's decision as to whether (a) the contract is in default; or (b) termination should be for convenience of the Government. To also consider whether the Stop Work Order clause should be modified to authorize conversion of a stop work order to a termination for default as well as a termination for convenience as is now provided. This item was forwarded to industry for comment on July 18, 1969. The date for receipt of comments was extended to October 6. Industry and government comments are being considered.

** **Guidelines for Administration of Small Business/Labor Surplus Area Subcontracting Programs Clauses.**

* **Foreign Tax Clause, ASPR 11–403.**

Conflict of Interest Clause. To consider whether further guidance in the regulation and appropriate contractual safeguards should be provided to avoid conflicts of interest which may be occasioned by acquisitions and mergers involving systems engineering contracts. This item was forwarded to industry for comment on July 8, 1969. Comments have been received and are currently under study.

ASPR Section IX, Part 2. To consider whether amendments to Section IX, Part 2, and other pertinent ASPR sections are necessary in view of the re-issued DOD Instruction 5010.12, dated Dec. 5, 1968, entitled "Management of Technical Data." This case is still under study by a subcommittee.

* **Use of Firm Fixed-Price Contracts for Development.**

Construction Warranty Clause, ASPR 1–324.10. To develop a revision of the subject clause in light of comments of the Association of General Contractors covering (a) design; (b) damages from defects and failures; and (c) use of the term "agent." This item was forwarded to industry for comment on Aug. 7, 1969. Receipt of comments from industry was extended to October 28. Comments have been received and are under consideration.

* **Specially Rated DOD Insurance Plans; (A) DOD Term Insurance Plan and (B) The National Defense Project Rating Plan.**

* **Recommended Changes to (A) Group Insurance Plans Under Cost-Reimbursement Type Contracts, ASPR 10–505, and (B) "Insurance-Liability to Third Persons" Clause, ASPR 7–203.22.**

Location Allowances at Unfavorable Locations. To consider the desirability of removing the current language in ASPR 12–105 and 15–205.6(j) on the basis that the existing coverage is no longer necessary, does not serve a useful purpose and, thus, should be eliminated. In conjunction with this action, to consider the desirability of modifying 15–107(i) to add coverage with respect to allowances for off-site pay, incentive pay, location allowances, hardship pay, cost-of-living differential, and the like. This item was forwarded to industry for comment on Aug. 7, 1969. Industry and government agency comments have been received, and are under consideration.

Verification of Catalog or Market Price Exceptions under Public Law 87–653. To consider the recommendation of the General Accounting Office that ASPR be revised (a) to require contractors to submit sales data of recent commercial sales for approximately similar quantities of the proposed purchase by the Government, prior to acceptance by the Government of a catalog or market price, and (b) to further provide that contracting officers to be required to verify the sales data submitted by contractors. The proposed coverage and a new DD Form 633 were forwarded to industry for comment on Sept. 29, 1969. The date for submission of comment was extended to Dec. 15, 1969.

Health and Safety Clauses. To review and present recommended changes concerning the applicability of the Health and Safety clauses currently prescribed in ASPR 7–104.78, .79, and .80, in light of the comments on this matter received from CODSIA. Revised ASPR coverage was forwarded to industry on Sept. 2, 1969. Comments have been received and are under consideration.

* **Government Property Clauses.**

Revision of ASPR B–311, C–311 and S3–603. To make necessary revisions to Appendix B–311 and Appendix C–311 and Supplement 3 to provide for uniform reporting by contractors of government property. Revisions to DD Form 1662 are included in the case and the subcommittee report has been extended until mid-December.

Financial Accounting for Government-Owned Facilities. Studies are underway to determine the extent of financial accounting required to effectively control government-owned facilities. This matter is still under consideration.

Single Service Management of Industrial Facilities. To develop procedures which will provide that only one contract authorizing use of government facilities will be in effect at any one location. It is intended that contracts which authorize the acquisition or furnishing of government facilities will provide for the automatic transfer of those facilities to the "use" contract upon receipt of installation. The subcommittee reporting date has been extended to Feb. 28, 1970.

Corporate Administrative Contract Officer Program. To provide for the appointment of a single corporate administrative contract officer to act, in the case of multi-plant companies, on matters which have corporate-wide application. The corporate administrative contract officer will not act on matters having only local application. These matters will continue to be received by the plant administrative contract officer. This matter is now under consideration by higher authority.

Bailment of Government Property to Contractors. To consider the development of proposed ASPR coverage including definition and policy with respect to bailment of government property to a contractor, as well as to the development and publication of a standard ASPR format of bailment agreement for DOD-wide use.

ASPR 15–205.6(f), Deferred Compensation. To clarify ASPR 15–205.6(f) covering deferred compensation in light of the questions raised concerning: (a) whether deductibility for Federal income tax purposes is a prerequisite to allowability for contract cost purposes; (b) the extent to which acturial gains and losses (including unrealized market appreciation and depreciation) must be taken into account in determining costs; (c) whether the cost of improvements in benefits to retired employees are allowable; (d) whether pay-as-you-go pension payments are allowable; and (e) whether contributions of interest equivalents or unfunded pension liabilities are allowable. This item was forwarded to industry for comment on July 8, 1969. Industry and government agency comments have been received and are under consideration.

"Limitation of Costs" ASPR 7–203.3, "Limitation of Funds" ASPR 7–402.2. To consider suggested changes of the subject clauses presented in a letter from Aerospace Industries Association, dated March 12, 1968, together with numerous other changes relating to procedural guidance and other miscellaneous areas of the regulation set forth in the letter. In considering the proposed change to the Limitation of Costs, Limitation of Funds clauses, the committee, rather than make changes in these clauses, developed a Special Termination clause for use in incrementally funded cost-reimbursement or fixed-price incentive contracts with a period of performance of two or more years, an estimated expenditure in excess of either $25 million of research, development, test and evaluation funds or $100 million of production funds. Under the clause, the contractor and the Government would reach agreement on maximum costs for certain categories of termination. These costs would then be excepted from the fund restrictions of the Limitation of Costs or Limitation of Funds provisions. The Special Termination Costs clause was forwarded to industry for comment on July 18, 1969. Comments have been received and are under study, as are the remaining recommendations and suggestions set forth in the Aerospace Industries Association letter.

ASPR Coverage for Training and Educational Costs. To consider the necessity for revising ASPR 15–205.44 in light of internal and external correspondence indicating (a) the need for supplemental guidance to cover cost of attendance of contractor employees at specialized courses, such as those conducted by the Harvard Graduate School of Business Administration; (b) to allow part-time education related to "company areas of interest in the field where the employee is now working or may reasonably be expected to be employed;" (c) liberalization of the 156-hours-per-year limitation on part-time education; (d) relaxation of the one-year limitation for full-time graduate or post-graduate study and allowing education for other than engineering and scientific purposes; (e) allowing "matching payments"; and (f) to consider the feasibility of allowing all reasonable training and educational costs. A report from the subcommittee on this subject is in and scheduled to be considered in the near future.

Forward Pricing Rate Agreements. To consider the desirability of providing ASPR coverage with respect to forward pricing rate agreements covering (a) definition; (b) establishment; (c) use; and (d) procedures, as well as the relationship of such agreements to contracts subject to the requirement of Public Law 87–653. Proposed coverage has been developed and was forwarded to industry for comment on Oct. 30, 1969.

Clarification of Application of CWAS to Limitations Contained in the Cost Principles. To consider the need of clarifying the application of CWAS to specified restrictions or exclusions contained in the cost principles, as well as the correction of any errors in the CWAS designations. The proposed revisions were forwarded to industry for comment on Nov. 18, 1969.

Warranties—Consequential Damages. To develop DOD policy and appropriate ASPR coverage for contractual warranties, expressed and implied, relating to latent and patent defects, as well as consequential damages. This assignment involves not only consideration of the expressed or implied warranties under the Inspection clause, but further includes consideration of whether specific contractual provisions should be developed to cover these areas. This matter is still under consideration.

Severance Pay to Employees on Support Service Contracts. To consider whether ASPR 15–107, "Advance Understandings on Particular Cost Items," should be expanded to explicitly cover severance pay when support service contracts are replaced, particularly with respect to payment to employees whose employment with the phasing-out contractor is severed but who maintain continuity of employment and credit for seniority with the follow-on contractor. Additional clarifying language has been developed by the committee and concurred in for the purpose of obtaining industry comments.

Negotiated Overhead Rates Clause. To consider revising ASPR Section III, Part 7, to eliminate the duplication of effort and the excessive administrative burden generated by paragraph (d) of the Negotiated Overhead Rates clause, which requires the modification of each affected contract to incorporate annually negotiated overhead rates. Proposed coverage providing that written overhead agreements, executed by both the Government and the contractor, will be automatically incorporated upon execution into all affected contracts has been developed. The proposed coverage was forwarded to industry for comment on Nov. 18, 1969.

Late Proposals and Modifications in Negotiated Procurements. To consider revising ASPR 3–506 covering late proposals and modifications thereof in negotiated procurements in light of the numerous General Accounting Office decisions in this area.

Omnibus General Accounting Office and DOD Audit Clauses. To consider the feasibility of developing an omnibus General Accounting Office Examination of Records clause and an omnibus DOD Audit clause to replace the existing Examination of Records clauses and the numerous DOD Audit clauses. The development of a single Examination of Records clause has been undertaken in conjunction with representatives of the General Accounting Office. Similarly, a draft of a proposed single DOD Audit clause has been developed. It is contemplated that the new clauses will be forwarded to industry for comment in the near future.

Evaluation Criteria. To undertake the development of additional guidance of evaluation criteria to be included in solicitations, thus giving effect to numerous General Accounting Office decisions that prospective offerors should be advised of the relative importance to be attached to each evaluation factor. This matter is presently under study.

Nike Hercules Sites Closing

Further reduction in Nike Hercules units has been announced by the Army, to be completed by March 31, 1970. Previously announced Nike Hercules inactivations, scheduled for completion by June 1970, have been revised and will also be completed by March 31.

The recently announced actions will close six firing sites and four headquarters sites in the Niagara-Buffalo and the Cincinnati-Dayton areas. Four Nike Hercules batteries and one headquarters and headquarters battery will be closed at Fort Bliss, Tex.

NAVSUP Observes 175th Anniversary

The U.S. Navy Supply Corps will observe 175 years of "service to the Fleet" on Feb. 23, 1970. Now known as the Naval Supply Systems Command (NAVSUP), one of the systems commands of the Naval Material Command, it manages a worldwide logistic network supporting the Fleet in peace and war.

In 1795, Congress established a Purveyor of Public Supplies, thus instituting Navy Procurement and Supply Ashore. The Navy Supply Corps grew in status in succeeding years and, in a Navy reorganization in 1842, a Bureau of Provisions and Clothing was established, succeeded in 1892 by the Bureau of Supplies and Accounts. In 1966, when four bureaus of the Navy Department were reorganized into six systems commands, it became the Naval Supply Systems Command under the Chief of Naval Material.

NAVSUP's mission consists of six responsibilities: supply operations, purchase, resale, food service, printing and transportation. It exercises management control over three inventory control points and nine U.S.-based naval supply centers and depots. At these installations, determination is made on what and how much to buy, when to buy it, and where to store it. NAVSUP does not buy the Navy's ships, planes and missile systems, but it does buy the repair parts, components and assemblies that keep the ships and weapons operating—from bullets and bombs to shipboard winches, anchors and overhaul services.

The command operates the Navy resale system through which it supplies the Navy exchanges, commissary stores, ships stores afloat, and Military Sea Transportation Service exchanges. Total sales in these activities amounted to $1.08 billion in FY 1969.

In its other areas of responsibility, NAVSUP operates the Navy food service program, including menu planning and food preparation, research on food handling, new techniques and equipment, and supervision of food management operation in the field. The command manages the Navy Publications and Printing Service, involving printing of all publications distributed to ships and stations—from ships' logs to official stationery. NAVSUP determines the Navy's requirements for transportation of materiel, provides funds for transportation costs, and monitors carriers' performance.

Marine Corps To Get British Harrier in 1971

Negotiations have been completed with the British government to purchase 12 Harrier aircraft for the U.S. Marine Corps. The Hawker-Siddeley Harrier is an operational single-seat, single-fanjet, transonic light attack aircraft, powered by a Rolls Royce Bristol Pegasus engine with a vertiele/short take-off and landing (V/STOL) capability.

Currently, the Harrier is the only operational jet V/STOL in the free world. Introduced into military service by the British Royal Air Force in April 1969, Harrier represents the culmination of 10 years research and development in V/STOL technology by the British government.

Deliveries of the aircraft to the Marine Corps will begin in January 1971.

Bullet Proof Tire Developed by USAF

A puncture proof tire has been developed for the Air Force by the Aeronautical Systems Division (ASD), AFSC, Wright-Patterson AFB, Ohio.

Produced by the Goodyear Tire and Rubber Co., Akron, Ohio, the tire is filled with a special foam rubber of controllable density. Pressures can be produced in 5-pound increments, from 10 to 100 pounds, to simulate that of pneumatic tires.

Tests have indicated that punctures with sticks, glass, nails, sharp spikes, bullets and like materials produce no deterioration in performance. In endurance tests, the tires have shown 25-percent greater life than pneumatic tires of comparable size and capacity.

Project engineer is William Gregory of the Vehicle and Maintenance Branch of ASD.

Status of Funds Quarterly Report

Outlays

First Quarter, Fiscal Year 1970

(Thousands of Dollars)

Department of Defense

	Outlays				Unpaid obligations	
	July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	At start of year	As of 30 Sept 1969
Military Personnel						
Active forces	1,633,174	1,818,588	1,838,604	5,290,366	592,306	843,157
Reserve forces	103,937	125,772	92,103	321,812	152,294	155,419
Retired pay	213,446	221,283	224,454	659,183	6,354	7,671
Undistributed	4,082	−73,733	20,580	−49,071	—	49,071
Total—Military Personnel	1,954,639	2,091,910	2,175,741	6,222,290	750,955	1,055,318
Operation and Maintenance	1,572,248	2,094,710	1,708,818	5,375,776	3,924,991	4,432,889
Procurement						
Aircraft	673,160	774,661	614,825	2,062,646	7,701,062	6,700,317
Missiles	188,363	205,329	272,577	666,269	2,516,998	2,495,476
Ships	159,804	181,541	185,308	526,653	3,085,253	2,961,361
Tracked combat vehicles	−6,218	36,640	26,239	56,661	454,414	447,557
Ordnance, vehicles and related equipment	215,369	375,776	494,848	1,085,993	5,690,581	5,673,862
Electronics and communications	54,836	101,055	93,972	249,863	1,621,409	1,547,146
Other procurement	146,097	156,179	210,292	512,568	2,016,381	2,007,101
Undistributed	326,717	29,855	−14,391	342,181	128,925	−74,904
Total—Procurement	1,758,127	1,861,036	1,883,671	5,502,834	23,215,023	21,757,915
Research, Development, Test, and Evaluation						
Military sciences	59,643	80,317	73,303	213,263	712,919	715,698
Aircraft	98,202	97,838	99,618	295,658	681,935	853,572
Missiles	151,617	183,973	206,610	542,200	1,077,605	1,271,898
Astronautics	98,139	63,715	71,935	233,789	452,428	476,736
Ships	22,803	34,527	25,225	82,555	284,836	359,974
Ordnance, vehicles and related equipment	24,601	27,529	28,709	80,839	229,411	262,978
Other equipment	60,426	86,585	79,236	226,247	501,780	589,734
Program-wide management and support	51,621	22,709	31,748	106,078	282,019	275,280
Undistributed	27,988	16,488	4,470	48,946	38,151	−15,094
Total—Research, Development, Test, & Evaluation	595,040	613,683	620,853	1,829,576	4,261,084	4,790,774
Military Construction	100,941	136,828	112,517	350,286	1,806,093	1,578,475
Family Housing	44,603	55,062	52,703	152,368	256,946	230,662
Civil Defense	5,743	8,818	6,802	21,363	55,255	50,188
Other—Special Foreign Currency Program	2	72	34	108	363	384
Revolving and Management Funds	319,666	−238,747	−68,662	12,257	6,615,240	7,030,635
Applicable Receipts	−7,273	−10,116	−13,046	−30,435	—	—
Subtotal—Federal Funds	6,434,736	6,613,255	6,479,431	19,436,422	40,885,950	40,927,247
Trust Funds	1,977	−1,237	−814	−74	4,534	4,132
Interfund Transactions	—	—	−3	−3	—	—
Total—Military Functions	6,345,714	6,612,017	6,478,614	19,436,345	40,890,483	40,931,378
Military Assistance						
Federal Funds	12,123	57,652	53,300	123,075	1,562,839	1,511,537
Trust Funds	−28,003	−2,670	23,932	−6,741	227,015	205,204
Total—Military Assistance	−15,880	54,983	77,231	116,334	1,789,854	1,716,741
TOTAL—DEPARTMENT OF DEFENSE	6,329,834	6,667,000	6,555,845	19,552,679	42,680,337	42,648,120

Department of the Army

Military Personnel						
Active forces	583,427	746,902	758,100	2,088,429	213,798	412,707
Reserve forces	73,383	86,384	63,275	223,042	115,658	110,068
Undistributed	5,324	−89,979	14,715	−69,940	—	69,940
Total—Military Personnel	662,134	743,307	836,090	2,241,531	329,457	592,715
Operation and Maintenance	556,921	720,486	569,809	1,847,216	1,337,348	1,529,125
Procurement						
Aircraft	86,989	76,405	65,008	228,402	1,063,782	918,188
Missiles	29,225	46,707	75,721	151,653	848,404	791,087
Tracked combat vehicles	−6,537	33,429	24,058	50,950	431,068	429,310
Ordnance, vehicles and related equipment	65,374	159,246	295,424	520,044	2,965,280	2,739,647
Electronics and communications	−58	36,793	37,556	74,291	581,475	542,295
Other procurement	407	50,251	41,212	91,870	682,896	628,653
Undistributed	319,473	28,669	27,328	320,814	39,722	−141,540
Total—Procurement	494,873	431,500	511,651	1,438,024	6,612,627	5,907,640
Research, Development, Test, & Evaluation						
Military sciences	9,301	10,500	13,535	33,336	96,888	123,295
Aircraft	3,411	7,129	4,562	15,102	89,782	86,616
Missiles	35,252	57,925	96,406	189,583	419,831	457,669
Astronautics	844	490	431	1,765	3,813	3,563
Ordnance, vehicles and related equipment	11,695	16,046	13,567	41,308	115,667	134,372
Other equipment	16,914	31,775	27,405	76,094	196,095	212,442
Program-wide management and support	6,491	4,297	4,571	15,359	32,104	33,685
Undistributed	26,752	8,134	−4,306	30,580	13,651	−18,412
Total—Research, Development, Test, & Evaluation	110,660	136,296	156,171	403,127	967,831	1,033,230
Military Construction	33,260	48,924	41,673	123,857	776,104	741,609
Revolving and Management Funds	165,738	−3,646	−33,019	129,073	1,856,891	1,781,203
Applicable Receipts	−3,728	−4,801	−4,845	−13,374	—	—
Subtotal—Federal Funds	2,019,861	2,072,063	2,077,529	6,169,453	11,880,257	11,585,524
Trust Funds	2,309	−1,245	−1,305	−241	89	−47
TOTAL—DEPARTMENT OF THE ARMY	2,022,170	2,070,817	2,076,225	6,169,212	11,880,346	11,585,477

Department of the Navy

	Outlays				Unpaid obligations	
	July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	At start of year	As of 30 Sept 1969
Military Personnel						
Active forces	500,071	528,935	534,395	1,563,401	168,734	256,380
Reserve forces	15,916	17,573	13,668	47,157	23,320	31,638
Undistributed	−1,151	13,629	7,143	19,621	—	−19,621
Total—Military Personnel	514,836	560,137	555,206	1,630,179	192,054	268,397
Operation and Maintenance	403,147	693,570	440,794	1,537,511	1,537,613	1,577,810
Procurement						
Aircraft	222,634	200,045	192,628	615,307	2,861,615	2,411,739
Missiles	57,856	45,549	56,421	159,826	703,716	723,984
Ships	159,804	181,541	185,308	526,653	3,085,253	2,961,361
Tracked combat vehicles	319	3,211	2,181	5,711	23,346	18,247
Ordnance, vehicles and related equipment	90,617	124,935	110,795	326,347	1,536,287	1,528,909
Electronics and communications	34,892	37,923	26,052	98,867	576,715	542,286
Other procurement	84,884	65,680	96,668	247,232	1,194,841	1,233,543
Undistributed	1,352	−2,065	15,384	14,671	71,369	55,148
Total—Procurement	652,358	656,819	685,438	1,994,615	10,053,142	9,475,216
Research, Development, Test, & Evaluation						
Military sciences	11,642	15,706	15,044	42,392	129,992	134,770
Aircraft	28,277	44,183	46,510	118,970	253,929	399,085
Missiles	42,446	46,539	54,889	143,874	291,240	318,702
Astronautics	951	2,287	1,156	4,394	15,598	16,697
Ships	22,803	34,527	25,225	82,555	284,836	359,974
Ordnance, vehicles and related equipment	12,906	11,483	15,142	39,531	113,744	128,606
Other equipment	10,775	14,784	14,552	40,111	77,139	150,004
Program-wide management and support	22,842	−11,415	4,642	16,069	219,464	190,187
Undistributed	−1,637	2,163	2,949	3,475	14,446	9,644
Total—Research, Development, Test, & Evaluation	151,005	160,257	180,109	491,371	1,400,388	1,707,668
Military Construction	31,857	41,348	32,241	105,446	616,207	504,022
Revolving and Management Funds	113,579	−198,084	24,232	−60,273	2,199,935	2,288,606
Applicable receipts	−1,789	−3,259	−4,519	−9,567	—	—
Subtotal—Federal Funds	1,864,992	1,910,789	1,913,501	5,689,282	15,999,338	15,821,719
Trust Funds	54	527	959	1,540	122	152
Interfund Transactions	—	—	−3	−3	—	—
TOTAL—DEPARTMENT OF THE NAVY	1,865,046	1,911,316	1,914,457	5,690,819	15,999,460	15,821,871

Department of the Air Force

Military Personnel						
Active forces	549,676	542,751	546,109	1,638,536	209,774	174,070
Reserve forces	14,638	21,815	15,160	51,613	13,316	13,713
Undistributed	−91	2,617	−1,278	1,248	—	−1,248
Total—Military Personnel	564,223	567,183	559,991	1,691,397	223,090	186,535
Operation and Maintenance	519,009	576,893	609,840	1,705,742	953,240	1,201,466
Procurement						
Aircraft	363,537	498,211	357,189	1,218,937	3,775,665	3,370,390
Missiles	101,282	113,073	140,435	354,790	964,878	980,405
Ordnance, vehicles and related equipment	59,370	91,473	88,600	239,443	1,188,875	1,405,174
Electronics and communications	19,673	24,872	29,843	74,388	455,843	457,292
Other procurement	59,174	37,812	68,069	165,055	95,195	99,976
Undistributed	5,422	3,635	−2,492	6,565	17,834	11,619
Total—Procurement	608,457	769,076	681,645	2,059,178	6,498,290	6,324,856
Research, Development, Test, & Evaluation						
Military sciences	11,526	13,507	5,576	30,609	90,842	99,346
Aircraft	66,514	46,526	48,546	161,586	338,224	367,871
Missiles	73,919	79,509	55,315	208,743	366,534	495,527
Astronautics	96,344	60,938	70,348	227,630	433,017	456,476
Other equipment	32,737	40,026	37,279	110,042	228,546	227,288
Program-wide management and support	22,288	29,827	22,535	74,650	30,451	51,408
Undistributed	2,873	6,191	5,827	14,891	10,054	−6,326
Total—Research, Development, Test, & Evaluation	306,201	276,525	245,426	828,152	1,497,668	1,691,589
Military Construction	35,296	44,542	37,899	117,737	393,810	314,798
Revolving and Management Funds	28,569	−4,925	−80,308	−56,664	1,276,941	1,773,254
Applicable Receipts	−1,757	−2,052	−3,678	−7,487	—	—
Subtotal—Federal Funds	2,059,997	2,227,243	2,050,815	6,338,055	10,843,039	11,492,498
Trust Funds	−386	−518	−469	−1,373	4,323	4,027
TOTAL—DEPARTMENT OF THE AIR FORCE	2,059,611	2,226,725	2,050,346	6,336,682	10,847,362	11,496,525

Defense Agencies/Office of the Secretary of Defense	Outlays				Unpaid obligations	
	July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	At start of year	As of 30 Sept 1969
Military Personnel						
Retired Pay	213,446	221,283	224,454	659,183	6,354	7,671
Operation and Maintenance	93,172	103,760	88,375	285,307	96,790	124,487
Procurement						
Ordnance, vehicles and related equipment	8	122	29	159	139	132
Electronics and communications	329	1,467	521	2,317	7,376	5,273
Other procurement	1,632	2,436	4,343	8,411	43,449	44,929
Undistributed	470	—384	45	131	—	—131
Total—Procurement	2,439	3,641	4,938	11,018	50,964	50,203
Research, Development, Test, & Evaluation						
Military sciences	27,174	40,604	39,148	106,926	395,197	358,287
Military Construction	529	2,013	704	3,246	19,972	18,046
Family Housing	44,603	55,062	52,703	152,368	256,946	230,662
Other—Special Foreign Currency Program	2	72	34	108	363	384
Revolving and Management Funds	11,781	—32,093	20,434	122	1,281,474	1,187,574
Applicable Receipts	—1	—2	—4	—7	—	—
Subtotal—Federal Funds	393,144	394,341	430,785	1,218,270	2,108,061	1,977,316
Trust Funds	—	—	—	—	—	—
TOTAL—DEFENSE AGENCIES/OSD	393,144	394,341	430,785	1,218,270	2,108,061	1,977,316

Office of Civil Defense

Civil Defense	5,743	8,818	6,802	21,363	55,255	50,189

Obligations

Department of Defense	Available for obligation	Obligations				Unobligated balance 30 Sept 1969
		July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	
	(*)					(*)
Military Personnel						
Active forces		1,903,308	1,855,277	1,860,200	5,618,885	
Reserve forces		140,418	110,245	73,889	324,552	
Retired pay		214,681	221,452	224,212	660,345	
Total—Military Personnel		2,258,408	2,187,074	2,158,301	6,603,783	
Operation and Maintenance		2,557,154	2,029,853	1,797,625	6,384,632	
Procurement						
Aircraft		229,749	376,800	585,682	1,192,231	
Missiles		138,719	146,276	378,767	663,762	
Ships		139,240	121,666	148,960	409,866	
Tracked combat vehicles		770	10,737	71,807	83,314	
Ordnance, vehicles and related equipment		107,798	427,421	1,046,764	1,581,983	
Electronics and communications		48,464	72,455	93,574	214,493	
Other procurement		185,920	153,949	244,874	584,743	
Undistributed		127	−413	−541	−827	
Total—procurement		850,788	1,308,888	2,569,888	4,729,564	
Research, Development, Test, & Evaluation						
Military sciences		88,897	70,284	72,430	231,611	
Aircraft		53,970	282,726	137,061	473,757	
Missiles		419,057	225,227	142,949	787,233	
Astronautics		139,849	72,943	59,412	272,204	
Ships		71,138	54,427	37,358	162,923	
Ordnance, vehicles and related equipment		35,211	58,140	23,010	116,361	
Other equipment		122,223	107,516	93,605	323,344	
Program-wide management and support		78,738	34,045	62,501	175,284	
Emergency fund		—	—	—	—	
Undistributed		−500	−33	−482	−1,015	
Total—Research, Development, Test, & Evaluation		1,008,583	905,276	627,841	2,541,701	
Military Construction		60,569	109,424	104,351	274,344	
Family Housing		61,388	35,557	32,165	129,110	
Civil Defense		4,831	5,901	5,548	16,280	
Other—Special Foreign Currency		42	87	—	129	
Revolving and Management Funds		2,437,298	2,119,974	1,582,244	6,139,516	
Applicable Receipts		−7,678	−9,796	−11,106	−28,580	
Subtotal—Federal Funds		9,231,383	8,692,238	8,866,857	26,790,478	
Trust Funds		1,963	5,092	1,528	8,583	
Interfund Transactions		—	−2	−2,582	−2,584	
Total—Military Functions		9,233,345	8,697,331	8,865,800	26,796,476	
Military Assistance						
Federal Funds		99,249	10,064	12,724	122,037	
Trust Funds		−29,190	−19,064	19,702	−28,552	
Total—Military Assistance		70,059	−9,001	32,427	93,485	
TOTAL—DEPARTMENT OF DEFENSE		9,303,404	8,688,331	8,898,226	26,889,961	

*In OBLIGATIONS portion of Status of Funds Report, First Quarter, FY 1970, under column heads "Available for Obligation" and "Unobligated Balance, 30 Sept 1969," figures were not compiled at the time report was issued because FY 1970 appropriation authorizations for the Defense Department had not been approved by Congress.

Department of the Army

	Available for obligation	Obligations				Unobligated balance 30 Sept 1969
		July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	
	(*)					(*)
Military Personnel						
Active forces		790,925	740,600	782,036	2,313,561	
Reserve forces		105,349	66,347	46,016	217,712	
Total—Military Personnel		896,274	806,948	828,051	2,531,273	
Operation and Maintenance		1,008,231	667,606	596,063	2,271,900	
Procurement						
Aircraft		2,619	63,852	22,845	89,316	
Missiles		11,388	18,683	76,174	106,245	
Tracked combat vehicles		307	10,888	71,507	82,702	
Ordnance, vehicles and related equipment		88,417	138,903	578,853	806,173	
Electronics and communications		5,774	15,475	27,986	49,235	
Other procurement		10,966	28,024	25,323	64,313	
Undistributed		127	−413	343	57	
Total—Procurement		119,598	275,412	803,031	1,198,041	
Research, Development, Test, & Evaluation						
Military sciences		29,508	20,330	16,029	65,867	
Aircraft		4,277	3,287	6,334	13,898	
Missiles		129,653	50,028	53,551	233,232	
Astronautics		424	400	691	1,515	
Ordnance, vehicles and related equipment		25,947	20,962	15,185	62,094	
Other equipment		24,485	41,564	32,746	98,795	
Program-wide management and support		9,258	4,218	4,338	17,814	
Undistributed		−500	−33	−82	−615	
Total—Research, Development, Test, & Evaluation		223,052	140,756	128,792	492,600	
Military Construction		29,227	81,699	29,469	140,395	
Revolving and Management Funds		482,677	461,257	424,302	1,368,236	
Applicable receipts		−3,828	−4,780	−4,763	−13,371	
Subtotal—Federal Funds		2,755,232	2,328,898	2,804,944	7,989,074	
Trust Funds		1	3,399	−1	−3,399	
TOTAL—DEPARTMENT OF THE ARMY		2,755,233	2,432,297	2,804,943	7,992,473	

Department of the Navy

Military Personnel						
Active forces		559,670	565,803	536,444	1,661,917	
Reserve forces		20,594	20,663	14,342	55,599	
Total—Military Personnel		580,264	586,466	550,786	1,717,516	
Operation and Maintenance		450,938	686,432	580,414	1,717,784	
Procurement						
Aircraft		16,149	72,366	97,693	186,208	
Missiles		31,814	17,099	136,171	185,084	
Ships		139,240	121,666	148,960	409,866	
Tracked combat vehicles		463	−151	300	612	
Ordnance, vehicles and related equipment		−7,016	164,707	162,224	319,915	
Electronics and communications		19,975	18,609	27,967	66,551	
Other procurement		114,605	88,803	136,152	339,560	
Undistributed		—	—	−1,187	−1,187	
Total—Procurement		315,231	483,098	708,279	1,506,608	
Research, Development, Test, & Evaluation						
Military sciences		32,974	6,069	9,618	48,661	
Aircraft		29,907	195,796	38,448	264,151	
Missiles		111,298	57,924	9,888	179,110	
Astronautics		908	2,817	1,768	5,493	
Ships		71,138	54,427	37,358	162,923	
Ordnance, vehicles and related equipment		9,264	37,178	7,825	54,267	
Other equipment		67,588	29,176	17,041	113,805	
Program-wide management and support		23,348	3,466	32,312	59,126	
Undistributed		—	—	—	—	
Total—Research, Development, Test, & Evaluation		346,425	386,853	154,258	887,536	
Military Construction		19,217	14,945	60,264	94,426	
Revolving and Management Funds		573,167	904,383	628,126	2,105,676	
Applicable Receipts		−1,789	−3,257	−1,939	−6,985	
Subtotal—Federal Funds		2,283,454	3,058,919	2,680,188	8,022,561	
Trust Funds		136	778	879	1,793	
Interfund Transactions		—	−2	−2,582	−2,584	
TOTAL—DEPARTMENT OF THE NAVY		2,283,589	3,059,696	2,678,485	8,021,770	

*In OBLIGATIONS portion of Status of Funds Report, First Quarter, FY 1970, under column heads "Available for Obligation" and "Unobligated Balance, 30 Sept 1969," figures were not compiled at the time report was issued because FY 1970 appropriation authorizations for the Defense Department had not been approved by Congress.

Department of the Air Force

	Available for obligation	Obligations				Unobligated balance 30 Sept 1969
		July 1969	August 1969	September 1969	Cum thru 30 Sept 1969	
Military Personnel						
Active forces	(*)	552,712	548,975	541,720	1,643,407	(*)
Reserve forces		14,475	23,235	13,531	51,241	
Total—Military Personnel		567,189	572,208	555,251	1,694,648	
Operation and Maintenance		975,157	575,848	519,843	2,070,848	
Procurement						
Aircraft		210,981	240,582	465,144	916,707	
Missiles		95,517	110,494	166,422	372,433	
Ordnance, vehicles and related equipment		26,393	123,689	305,661	455,743	
Electronics and communications		22,597	38,218	37,678	98,493	
Other procurement		58,751	36,182	74,903	169,836	
Undistributed		—	—	303	303	
Total—Procurement		414,240	549,166	1,050,109	2,013,515	
Research, Development, Test, & Evaluation						
Military sciences		17,141	17,093	11,301	45,535	
Aircraft		19,786	83,643	92,279	195,708	
Missiles		178,106	117,275	79,510	374,891	
Astronautics		138,517	69,726	56,953	265,196	
Other equipment		30,150	36,776	43,818	110,744	
Program-wide management and support		46,132	26,361	25,851	98,344	
Undistributed		—	—	−400	−400	
Total—Research, Development, Test, & Evaluation		429,832	350,875	309,310	1,090,017	
Military Construction		8,914	14,829	14,460	38,203	
Revolving and Management Funds		1,097,766	490,067	300,817	1,888,650	
Applicable Receipts		−2,059	−1,758	−3,672	−7,489	
Subtotal—Federal Funds		3,491,039	2,551,235	2,746,117	8,788,391	
Trust Funds		1,826	916	648	3,390	
TOTAL—DEPARTMENT OF THE AIR FORCE		3,492,864	2,552,154	2,746,763	8,791,781	

Defense Agencies/Office of the Secretary of Defense

Military Personnel				
Retired pay	214,681	221,452	224,212	660,345
Operation and Maintenance	122,827	99,968	101,305	324,100
Procurement				
Ordnance, vehcicles and related equipment	4	122	26	152
Electronics and communications	118	149	−53	214
Other procurement	1,598	940	8,497	11,034
Undistributed	—	—	—	—
Total—Procurement	1,720	1,211	8,469	11,400
Research, Development, Test, & Evaluation				
Military sciences	9,274	26,792	35,482	71,548
Emergency fund	—	—	—	—
Undistributed	—	—	—	—
Total—Research, Development, Test, & Evaluation	9,274	26,792	35,482	71,548
Military Construction	3,212	−2,051	159	1,320
Family Housing	61,388	35,557	32,165	129,110
Other—Special Foreign Currency Program	42	87	—	129
Revolving and Management Funds	283,688	264,266	229,000	776,954
Applicable Receipts	−1	−2	−732	−735
Subtotal—Federal Funds	696,829	647,281	630,060	1,974,170
Trust Funds	—	—	—	—
TOTAL—DEFENSE AGENCIES/OSD	696,829	647,281	630,060	1,974,170

Office of Civil Defense

Civil Defense	4,831	5,901	5,548	16,280

Military Assistance

Federal Funds	99,249	10,064	12,724	122,037
Trust Funds	−29,190	−19,064	19,702	−28,552
TOTAL—MILITARY ASSISTANCE	70,059	−9,001	32,426	93,485

*In OBLIGATIONS portion of Status of Funds Report, First Quarter, FY 1970, under column heads "Available for Obligation" and "Unobligated Balance, 30 Sept 1969," figures were not compiled at the time report was issued because FY 1970 appropriation authorizations for the Defense Department had not been approved by Congress.

NOTE: All outlay amounts are on a net Treasury basis (gross payments less reimbursement collections), whereas obligations and unpaid obligations are on a gross basis (inclusive of reimbursable activity performed by components of DOD for each other). Therefore, unpaid obligations as of the end of the reporting month cannot be computed from other figures in this report.

Prepared by:

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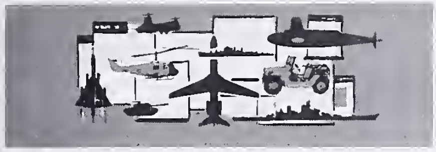

DEFENSE PROCUREMENT

Contracts of $1,000,000 and over awarded during the month of December 1969.

DEFENSE SUPPLY AGENCY

3—**Pettibone Mulliken Corp.,** Washington, D.C. $3,851,610. 105 rough terrain fork lift trucks. Defense General Supply Center, Richmond, Va. DSA 400-69-C-5415.

4—**Lester D. Lawson and Co.,** Long Beach, Calif. $3,760,264. 131,340 cases of ration supplement sundries pack. San Diego, Calif. Defense Personnel Support Center, Philadelphia, Pa. DSA 130-70-C-T025.

9—The Defense Personnel Support Center, Philadelphia, Pa., awarded the following contracts for leather combat boots:

Sportwelt Shoe Co., Nashua, N.H. $1,424,246. 153,990 pairs. Newport, N.H. DSA 100-70-C-1074.

Endicott Johnson Corp., Endicott, N.Y. $1,380,000. 150,000 pairs. Johnson City, N.Y. DSA 100-70-C-1075.

Altama Delta Corp., Darien, Ga. $1,083,000. 120,000 pairs. DSA 100-70-C-1076.

Genesco, Inc., Nashville, Tenn. $5,578,595. 635,740 pairs. Huntsville, Ala. DSA 100-70-C-1077.

Addison Shoe Corp., Wynne, Ark. $3,116,997. 360,000 pairs.

10—**Plastoid Corp.,** Hamburg, N.J. $2,582,996. 50,204 one-mile reels of telephone cable. Defense Industrial Supply Center, Philadelphia, Pa. DSA 500-70-C-4253.

12—**Caterpillar Tractor Co.,** Peoria, Ill. $3,140,501. 169 motorized road graders. Decatur, Ill. Defense Construction Supply Center, Columbus, Ohio. DSA 700-70-C-8386.

—**Allis Chalmers Co.,** Milwaukee, Wis. $2,217,261. 323 6,000-pound capacity fork lift trucks. Harvey, Ill. Defense General Supply Center, Richmond, Va. DSA 400-70-C-2897.

—**Winthrop Laboratories,** New York, N.Y. $1,974,839. 191,732 bottles of cloroquine and primaquine phosphate tablets. Rensselaer, N.Y. Defense Personnel Support Center, Philadelphia, Pa. DSA 120-70-C-1136.

—**Hyster Co.,** Portland, Ore. $1,006,346. 94 15,000-pound capacity fork lift trucks. Danville, Ill. Defense General Supply Center, Richmond, Va. DSA 400-70-C-2896.

—The following contracts for JP-5 jet fuel were issued by the Defense Fuel Supply Center, Alexandria, Va.:

Mobil Oil Corp., New York, N.Y. $14,436,500. 152,000,000 gallons. DSA 600-70-D-0770.

Golden Eagle Refining Co., Inc., Los Angeles, Calif. $5,512,821. 46,200,000 gallons. DSA 600-70-D-0704.

Douglas Oil Co. of Calif., Los Angeles, Calif. $3,234,000. 28,000,000 gallons. DSA 600-70-D-0760.

Humble Oil and Refining Co., Houston, Tex. $2,851,230. 26,300,000 gallons. DSA 600-70-D-0766.

Powerine Oil Co., Santa Fe Springs, Calif. $2,192,333. 19,500,000 gallons. DSA 600-70-D-0772.

Phillips Petroleum Co., Bartlesville, Okla. $1,725,690. 14,145,000 gallons. DSA 600-70-D-0771.

Fletcher Oil and Refining Co., Carson, Calif. $1,599,342. 13,900,000 gallons. DSA 600-70-D-0761.

Sun Oil Co., Philadelphia, Pa. $1,466,911. 13,451,333 gallons. DSA 600-70-D-0773.

Gulf Oil Co., Houston, Tex. $1,309,216. 12,639,000 gallons. DSA 600-70-D-0762.

—The following contracts for Navy special fuel oil were issued by the Defense Fuel Supply Center:

Texaco Export, Inc., New York, N.Y. $7,632,650. 5,350,000 barrels. DSA 600-70-D-0897.

Powerine Oil Co., Santa Fe Springs, Calif. $4,980,080. 2,100,000 barrels. DSA 600-70-D-0892.

Asiatic Petroleum Corp., New York, N.Y. $1,359,000. 900,000 barrels. DSA 600-70-D-0888.

Union Oil Co. of Calif., Los Angeles, Calif. $5,768,250. 2,550,000 barrels. DSA 600-70-D-0898.

—The Defense Fuel Supply Center awarded the following contracts:

Hess Oil and Chemical Corp., Woodridge, N.J. $3,364,725. 850,000 barrels of diesel marine fuel oil. DSA 600-70-D-0891.

Union Oil Co. of Calif., Los Angeles, Calif. $4,057.750. 500,000 barrels diesel arctic fuel oil and 350,000 barrels diesel marine fuel oil. DSA 600-70-D-0885.

Atlantic Richfield Co., Los Angeles, Calif. $3,269,805. 745,000 barrels diesel marine fuel oil. DSA 600-70-D-0886. $2,624,000. 800,000 barrels Navy special fuel oil and 500,000 barrels #6 fuel oil. DSA 600-70-D-0889.

Standard Oil of Calif., San Francisco, Calif. $2,107,000. 100,000 barrels gasoline and 900,000 barrels #6 fuel oil. DSA 600-70-D-0894.

15—**Air Logistics Corp.,** Pasadena, Calif. $1,196,146. Momat kits and assault trackways for the Navy and Marine Corps. Defense Construction Supply Center, Columbus, Ohio. DSA 700-69-C-H-525-PZ04.

16—**A. H. Helmig and Co., Inc.,** Narberth, Pa. $1,070,186. 1,009,087 pounds of scoured wool. Philadelphia, Pa. Defense Personnel Support Center, Philadelphia, Pa. DSA 100-70-C-1089.

19—The following contracts for JP-4 jet fuel were issued by the Defense Fuel Supply Center, Alexandria, Va.:

Humble Oil & Refining Co., Houston, Tex. $21,690,604. 211,508,000 gallons. DSA 600-70-D-0817.

American Oil Co., Chicago, Ill. $8,458,645. 81,326,600 gallons. DSA 600-70-D-0776.

Continental Oil Co., Houston, Tex. $3,212,532. 31,367,000 gallons. DSA 600-70-D-0792.

Leonard Refineries, Inc., Alma, Mich. $3,694,184. 36,830,000 gallons. DSA 600-70-D-0825.

Mobil Oil Corp., New York, N.Y. $19,276,552. 185,500,000 gallons. DSA 600-70-D-0831.

Phillips Petroleum Co., Bartlesville, Okla. $3,815,727. 33,087,000 gallons. DSA 600-70-D-0836.

Standard Oil Co. of Calif. (Western Operations, Inc.), San Francisco, Calif. $6,832,636. 57,558,924 gallons. DSA 600-70-D-0841.

Sun Oil Co., Tulsa, Okla. $2,823,000. 30,000,000 gallons. DSA 600-70-D-0847.

Texaco, Inc., Long Island City, N. Y. $4,834,368. 50,400,000 gallons. DSA 600-70-D-0849.

Mene Grande Oil Co. (c/o Gulf Trading Co.), Washington, D.C. $2,948,400. 40,950,000 gallons. DSA 600-70-D-0859.

Union Oil Co. of California, Los Angeles. $7,563,647. 67,118,120 gallons. DSA 600-70-D-0855.

Sun Oil Co., Philadelphia, Pa. $2,209,480. 26,000,000 gallons. DSA 600-70-D-0953.

Hess Oil-Virgin Island Corp., St. Croix, U. S. Virgin Islands. $7,276,500. 113,400-000. DSA 600-70-D-0814.

Howell Refining Co., San Antonio, Tex. $3,057,212. 27,000,000 gallons. DSA 600-70-D-0819.

Kern County Refining, Inc., Los Angeles, Calif. $2,457,651. 20,845,800 gallons. DSA 600-70-D-0821.

MacMillan Ring-Free Oil, Inc., Los Angeles, Calif. $4,152,196. 36,957,000 gallons. DSA 600-70-D-0829.

Longview Refining Co., Houston, Tex. $1,011,933. 9,000,000 gallons. DSA 600-70-D-0823.

Wing Corp., San Antonio, Tex. $1,449,565. 13,000,000 gallons. DSA 600-70-D-0828.

Navajo Refining Co., Artesia, N. M. $3,402,000. 30,000,000 gallons. DSA 600-70-D-0833.

Atlantic Richfield Co., Los Angeles, Calif. $1,627,920. 14,280,000 gallons. DSA 600-70-D-0779.

Ashland Oil & Refining Co., Ashland, Ky. $2,971,230. 27,280,000 gallons. DSA 600-70-D-0778.

American Petrofina Co., Dallas, Tex. $2,928,236. 21,335,000 gallons. DSA 600-70-D-0785.

Alabama Refining Co., Theodore, Ala. $1,395,341. 14,500,000 gallons. DSA 600-70-D-0781.

Adobe Refining Co., La Blanca, Tex. $1,754,565. 15,000,000 gallons. DSA 600-70-D-0784.

Delta Refining Co., Memphis, Tenn. $5,106,212. 48,070,000 gallons. DSA 600-70-D-0799.

Coastal States Petrochemical Co., Houston, Tex. $4,803,433. 49,500,000 gallons. DSA 600-70-D-0791.

Chevron Oil Co., Denver, Colo. $1,603,087. 14,099,276 gallons. DSA 600-70-D-0796.

Bayou Refining Co., Inc., Pasadena, Tex. $2,112,365. 22,280,000 gallons. DSA 600-70-D-0787.

Tonkawa Refining Co., Houston, Tex. $2,272,210. 22,000,000 gallons. DSA 600-70-D-0850.

Tesoro Petroleum Corp., San Antonio, Tex. $4,330,610. 36,500,000 gallons. DSA 600-70-D-0853.

Tesoro-Alaskan Petroleum Corp., San Antonio, Tex. $5,108,120. 40,000,000 gallons. DSA 600-70-D-0852.

Sun Oil Co., Philadelphia, Pa. $4,838,000. 46,000,000 gallons. DSA 600-70-D-0842.

Southland Oil Co., Yazoo City, Miss. $1,088,358. 10,500,000 gallons. DSA 600-70-D-0848.

Hess Oil & Chemical Div., Amerada Hess Corp., Woodbridge, N. J. $1,246,000. 12,000,000 gallons. DSA 600-70-D-0813.

CONTRACT LEGEND

Contract information is listed in the following sequence: Date—Company — Value — Material or Work to be Performed—Location of Work Performed (if other than company plant) — Contracting Agency—Contract Number.

Pride Refining, Inc., Abilene, Tex. $2,018,545. 18,000,000 gallons. DSA 600–70–D–0839.

Okmulgee Refining Co., Inc., Okmulgee, Okla. $5,471,948. 55,730,000 gallons. DSA 600–70–D–0834.

Triangle Refining, Inc., Houston, Tex. $2,123,853. 19,350,000 gallons. DSA 600–70–D–0851.

Hercules Oil Co. of San Diego, Long Beach, Calif. $1,670,540. 14,714,000 gallons. DSA 600–70–D–0816.

Good Hope Refineries, Inc., Houston, Tex. $5,332,218. 55,100,000 gallons. DSA 600–70–D–0812.

Golden Eagle Refining Co., Los Angeles, Calif. $6,697,873. 58,800,000 gallons. DSA 600–70–D–0810.

Fort Worth Refining Co., Fort Worth, Tex. $2,928,236. 28,000,000. DSA 600–70–D–0807.

Famariss Oil & Refining Co., Hobbs, N. M. $1,394,458. 12,000,000 gallons. DSA 600–70–D–0805.

Edgington Oil Co., Long Beach, Calif. $2,329,727. 20,500,000 gallons. DSA 600–70–D–0803.

Douglas Oil Co. of California, Los Angeles. $5,324,000. 50,000,000 gallons. DSA 600–70–D–0801.

Diamond Shamrock Corp., Amarillo, Tex. $1,907,825. 16,800,000 gallons. DSA 600–70–D–0802.

29—**Gibraltar Fabrics, Inc.**, Brooklyn, N. Y. $1,397,083. 229,030 camouflaged poncho liners. Defense Personnel Support Center, Philadelphia, Pa. DSA 100–70–C–1204.

DEPARTMENT OF THE ARMY

1—**Chamberlain Manufacturing Corp.**, Elmhurst, Ill. $13,926,871. Metal parts for 175mm projectiles. Scranton, Pa. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–AA09–70–C–0131.

—**Northrop Carolina, Inc.**, Asheville, N. C. $3,459,264. CS2 riot control agent. Swannanea, N.C. Edgewood Arsenal, Md. DA–AA15–70–C–0216.

—**Thiokol Chemical Corp.**, Woodbine, Ga. $2,507,610. CS2 riot control agent. Edgewood Arsenal, Md. DA–AA15–70–C–0215.

—**Norris Industries, Inc.**, Los Angeles, Calif. $1,820,278 (contract modification). Production support and maintenance, Army Ammunition Plant, Riverbank, Calif. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–11–173–AMC–00998(A).

—**Teichert and Sons, Inc.**, Sacramento, Calif. $1,222,240. River bank protection on the Sacramento River Levee, Calif. Army Engineer District, Sacramento, Calif. DA–CW05–70–C–0049

2—**Standard Container Co.**, Montclair, N.J. $3,686,500. Metal boxes for small caliber ammunition. Homerville, Ga. Frankford Arsenal, Philadelphia, Pa. DA–AA25–70–C–0292.

—**Thiokol Chemical Corp.**, Woodbine, Ga. $1,391,432. Surface flares. Picatinny Arsenal, Dover, N.J. DA–AA21–70–C–0270.

—**William Clairmont, Inc.**, Bismarck, N.D. $1,235,999. Work on the Missouri River levee system near Bellevue, Neb. Army Engineer District, Omaha, Neb. DA–CW45–70–C–0042.

3—**Hughes Aircraft Co.**, Culver City, Calif. $64,400,000. TOW missiles. Culver City and Tucson, Ariz. DA–AH01–68–C–2141. $4,850,000. FY 1970 ground support equipment for the TOW missile. Culver City and El Segundo, Calif. DA–AH01–70–C–0318. Army Missile Command, Huntsville, Ala.

—**Miller Trailers, Inc.**, Bradenton, Fla. $1,674,456. 6-ton electronic van semitrailers (M373A5). Army Tank Automotive Command, Warren, Mich. DA–AE07–70–C–1904.

—**Stanley Consultants, Inc.**, Muscatine, Iowa. $1,031,000. Engineering services on site adaptation of standard design of the Missile Site Radar complex. Army Engineer Division, Huntsville, Ala. DA–CA87–70–C–0004.

—**Western Electric Co.**, New York, N.Y. $7,119,560 (contract modification). Spartan missile. McDonnell Douglas Corp., Santa Monica, Calif., and other subcontractors. $4,899,600 (contract modification). Missile site radar. Raytheon Co., Bedford, Mass., and other subcontractors. Safeguard System Command, Huntsville, Ala. DA–30–069–AMC–00333(Y).

4—**Hansel Phelps Construction Co.**, Greeley, Colo. Construction of the Dent Bridge over the north fork of the Clearwater River, Dworshak Dam and Reservoir project, near Orofino, Idaho. Army Engineer District, Walla Walla, Wash. DA–CW68–70–C–0044.

—**Institute for Defense Analysis**, Arlington, Va. $1,079,137 (contract modification). Basic and applied research for the Dir. for Defense Research and Engineering, and the Advanced Research Projects. Defense Supply Service, Washington, D.C. DA–HC–67–C–0011.

—**Paramus-Fairchild Camera and Instrument** Corp., Paramus, N.J. $1,387,500. Research and development on AN/ALQ–67(XE–5) countermeasures sets. Procurement Division, Army Electronics Command, Fort Monmouth, N.J. DA–AB07–70–C–0019.

5—**Western Electric Co.**, New York, N.Y. $8,665,270 (contract modification). Additional prototype hardware for the Perimeter Acquisition Radar Tactical Software Control Site and the Missile Site Radar Software Control Site. Raytheon Co., Bedford, Mass., Western Electric, Burlington, N.C., and other subcontractors. Safeguard Systems Command, Huntsville, Ala. DA–30–069–AMC–00333(Y).

—**Emerson Electric Co.**, St. Louis, Mo. $2,198,000. Repair parts for XM28 helicopter armament subsystem. St. Louis and Mt. Pleasant, Iowa. Army Procurement Agency, Chicago, Ill. DA–AG11–70–C–0354.

—**Bulova Watch Co.**, Providence, R.I. $1,539,350 (contract modification). M525 fuze head assemblies. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–AA09–70–C–0045.

—**Hughes Aircraft Co.**, Culver City, Calif. $4,226,900. AN/TAS–2 long range night observation devices. Army Mobility Equipment Research and Development Center, Fort Belvoir, Va. DA–AK02–70–C–0162.

—**Ray J. Benoit and Son, Inc.**, and **Van Duyne Brothers**, Kankakee, Ill. $2,648,000. Construction of a boiler plant and storage tanks, with supporting utilities, Army Ammunition Plant, Newport, Ind. Army Engineer District, Chicago, Ill. DA–CA23–70–C–0020.

8—**Philco-Ford Corp.**, Newport Beach, Calif. $2,583,787. FY 1970 engineering services for the Chaparral missile system. Anaheim and Newport Beach, Calif. Army Missile Command, Huntsville, Ala. DA–AH01–70–C–0460.

—**Teledyne Mid America Corp.**, Hartville, Ohio. $1,456,575. Mounted mine-clearing rollers. Army Mobility Research and Development Center, Fort Belvoir, Va. DA–AK02–70–C–0186.

9—**Texas Instruments, Inc.**, Dallas, Tex. $4,500,000. Classified electronic equipment. Army Electronics Command, Fort Monmouth, N.J.

—**AVCO Corp.**, Stratford, Conn. $1,005,000. Modification kits for T–53–L–13 engines for UH–1 helicopters. Army Aviation Systems Command, St. Louis, Mo. AF–41608–69–A–2421.

10—**Universal Terminal and Stevedoring** Corp., New York, N.Y. $16,072,455. Stevedoring and related services, Miltiary Ocean Terminal, Sunny Point, Southport, N.C., Jan. 1, 1970 to Dec. 31, 1971. Hq., Eastern Area Military Traffic Management and Terminal Service, Brooklyn, N.Y. DA–HC21–70–D–1035.

—**Kollsman Instrument Corp.**, Elmhurst, N.J. $1,466,580. M57 firing devices. Bridgeport, Conn. Picatinny Arsenal, Dover, N.J. DA–AA21–70–C–0303.

—**ITT Corp.**, Nutley, N.J. $9,257,600 (contract modification). AN/GRC–143 radio sets. Clifton, N.J. Procurement Division, Army Electronics Command, Philadelphia, Pa. DA–AB05–68–C–0001.

—**Research Analysis Corp.**, McLean, Va. $3,000,000 (contract modification). Research and scientific studies of Army tactical operations, and forecasting research and development material requirements. Army Research Office, Arlington, Va. DA–HC19–69–C–0017.

—**Baldwin Electronics, Inc.**, Little Rock, Ark. $1,707,075. Loading, assembling and packing 2.75 inch rocket motors. Camden, Ark. Picatinny Arsenal, Dover, N.J. DA–AA21–70–C–0306.

11—**United States Steel Corp.**, Pittsburgh, Pa. $1,525,320 (contract modification). M106 8-inch high explosive projectiles. Berwick, Pa. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–AA09–69–C–0226.

—**National Presto, Inc.**, Eau Claire, Wis. $2,699,235 (contract modification). M106 high explosive 8-inch projectiles. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–AA09–69–C–0109.

12—**General Motors Corp.**, Indianapolis, Ind. $1,541,877 (contract modification). Long lead time engineering services and hardware procurement for advanced production of the XM70 Main Battle Tank. Cleveland, Ohio, and Milwaukee, Wis. Army Tank Automotive Command, Warren, Mich. DA–AE07–69–C–5272.

—**Maremont Corp.**, Saco, Maine. $1,487,130 (contract modification). M60 7.62mm machine guns. Army Weapons Command, Rock Island, Ill. DA–AF03–70–C–0027.

—Frankford Arsenal, Philadelphia, Pa., awarded the following contracts for 20mm cartridge metallic link belts:

Wells Marine, Inc., Costa Mesa, Calif. $1,798,200. 9,000,000. DA–AA25–70–C–0323.

Gulf and Western Industries, Inc., Waukesha, Wis. $1,887,300. 9,000,000. DA–AA25–70–C–0324.

Barry L. Miller Engineering, Inc., Hawthorne, Calif. $1,321,181. 12,700,000. DA–AA25–70–C–0327.

Aluminum Specialty Co., Manitowoc, Wis. $1,347,445. 12,700,000. DA–AA25–70–C–0328.

15—The Army Ammunition Procurement and Supply Agency, Joliet, Ill., awarded the following contracts for metal fuze parts:

Rulon Co., Chicago, Ill. $6,547,890. DA–AA09–70–C–0159.

Keystone Manufacturing Corp., Boston, Mass. $6,379,380. DA–AA09–70–C–0158.

Walter Kidde and Co., Inc., Belleville, N.J. $4,819,500. DA–AA09–70–C–0160.

—**Gulf Stevedore Corp.**, New Orleans, La. $4,914,346. Stevedoring and related terminal services, Mobile, Ala., Jan. 1, 1970 to Dec. 31, 1971. Hq., Eastern Area Military Traffic Management and Terminal Services, Brooklyn, N.Y. DA–HC21–70–D–0138.

—**Acton Laboratories, Inc.**, Acton, Mass. $1,415,520. Telephone signal converters. Army Electronics Command, Philadelphia, Pa. DA–AB05–69–C–1031.

—**Consolidated Molded Products**, Scranton, Pa. $1,086,720. Metal parts for M18A1 mines. Picatinny Arsenal, Dover, N.J. DA–AA21–70–C–0314.

—**Kollsman Instrument Corp.**, Elmhurst, N.Y. $1,082,475. Metal parts for M18A1 mines. Bridgeport, Conn. Picatinny Arsenal, Dover, N.J. DA–AA21–70–C–0315.

16—**General Electric Co.**, Burlington, Vt. $2,462,500. XM93 armament subsystem pintle mounts for 7.62mm guns. Army Weapons Command, Rock Island Arsenal, Ill. DA–AF03–70–C–0043.

—**KDI Precision Products, Inc.**, Cincinnati, Ohio. $1,536,104. Metal parts of 2.75-inch rocket fuzes. Army Ammunition Procurement Supply Agency, Joliet, Ill. DA–AA09–70–C–0225.

17—**Wells Marine, Inc.**, Costa Mesa, Calif. $1,000,167. 20mm projectiles. Frankford Arsenal, Philadelphia, Pa. DA–AA–25–70–C–0339.

18—**Levinson Steel Co.**, Pittsburgh, Pa. $3,197,568 (contract modification). 105mm projectiles. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–AA09–69–C–0023.

19—**Pacific Intermodal Corp.**, Seattle, Wash. $3,178,416. Container stuffing services involving stowing cargo destined for overseas into vans and CONEXES and the reverse for retrograde cargo from Jan. 1, 1970, thru Dec. 31, 1971. Oakland, Calif. Western Area Military Traffic Management and Terminal Services, Oakland, Calif. DA–HC23–70–D–0005.

—**Kaiser Steel Corp.**, El Monte, Calif. $2,127,975. M2A1 ammunition boxes. Culver City, Calif. Frankford Arsenal, Philadelphia, Pa. DA–AA25–70–C–0308.

—**Massachusetts Institute of Technology**, Cambridge, Mass. $1,035,550. Establish and operate a program in computer analyses and modeling in the behavioral sciences. Advanced Research Projects Agency, Washington, D.C. DA–HC15–69–C–0347.

—**Bell & Howell Co.**, Chicago, Ill. $1,229,850. Grenade fuzes. Evanston, Ill. Army Procurement Agency, Chicago, Ill. DA–AA09–70–C–0013.

—**Bell & Howell Co.**, Chicago, Ill. $1,070,192 (contract modification). Metal parts for M84A1 time fuzes. Army Procurement Agency, Chicago, Ill. DA–AA09–70–C–0067.

22—**General Motors Corp.**, Indianapolis, Ind. $3,479,171 (contract modification). Engineering services for the M551 vehicle. Cleveland, Ohio. Army Weapons Command, Rock Island Arsenal, Ill. DA–33–019–AMC–00248(W).

—**Chrysler Corp.**, Dayton, Ohio. $1,821,440. Range finders for M60A1 tanks. Frankford Arsenal, Philadelphia, Pa. DA–AA25–70–C–0362.

—R. L. **Pohlman Armament Co.**, Maryland Heights, Mo. $1,257,051. M505A3 fuzes. Frankford Arsenal, Philadelphia, Pa. DA–AA25–70–C–0330.

—**Galion Amco, Inc.**, Galion, Ohio. $1,257,051. M505A3 fuzes. Frankford Arsenal, Philadelphia, Pa. DA–AA25–70–C–0329.

23—**Uniroyal, Inc.**, New York, N. Y. $40,797,850 (contract modification). Explosives. Joliet, Ill. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–11–173–AMC–00062(A).

—**Olin Mathieson Chemical Corp.**, E. Alton, Ill. $17,302,549 (contract modification). Production of rocket propellant and ammunition components. Charlestown, Ind. Army Ammunition and Supply Agency, Joliet, Ill. DA–AA09–69–C–0148.

—**National Presto Industries**, Eau Clair, Wis. $16,787,400 (contract modification). Metal parts for 8-inch projectiles. Army Ammunition and Supply Agency, Joliet, Ill. DA–AA09–69–C–0109.

—**U.S. Steel Corp.**, Pittsburgh, Pa. $9,577,449. Metal parts for 8-inch projectiles. Berwick, Pa. Army Ammunition and Supply Agency, Joliet, Ill. DA–AA09–70–C–0236.

—**Hercules, Inc.**, Wilmington, Del. $6,684,400 (contract modification). Manufacture artillery propellants and explosives. Radford, Va. Army Ammunition and Supply Agency, Joliet, Ill. DA–11–173–AMC–00037(A).

—**Alcan Aluminum Corp.**, Riverside, Calif. $2,566,277. 66mm rocket motors. Army Ammunition and Supply Agency, Joliet, Ill. DA–AA09–70–C–0239.

—**Western Electric Co.**, New York, N. Y. $4,427,260 (contract modification). Software and programming for Safeguard System. Whippany and Morris Plains, N. J. Safeguard System Command, Huntsville, Ala. DA–30–069–AMC–00333(Y).

—**Henry Spen & Co., Inc.**, Brooklyn, N. Y. $1,751,963 (contract modification). 4-ton trailers. Army Tank Automotive Command, Warren, Mich. DA–AE07–69–C–5307.

—**IBM Corp.**, Gaithersburg, Md. $1,685,740 (contract modification). Procure an additional core type ADP support system. Gaithersburg and Needham Heights, Mass. Army Electronics Command, Arlington, Va. DA–AB07–67–C–0408.

—**Honeywell, Inc.**, Framingham, Mass. $1,000,000. Classified electronics. Army Electronics Command. Ft. Monmouth, N. J.

24—AVCO **Corp.**, Stratford, Conn. $4,850,000. Modification kits for T–53 gas turbine engines for UH–1 helicopters. Army Aviation Systems Command, St. Louis, Mo. F–41608–69–A2421.

—**Wells Marine, Inc.**, Costa Mesa, Calif. $1,350,938. 20mm projectiles. Army Frankford Arsenal, Philadelphia, Pa. DA–AA–25–70–C0361.

29—AVCO **Corp.**, Stratford, Conn. $1,972,099. Turbine nozzles for T–53 helicopter engines. Army Aviation Systems Command, St. Louis, Mo. AF 41608–69–A2421.

—**Mine Safety Appliance Co.**, Pittsburgh, Pa. $10,361,655. 599,575 protective field masks (M17A1). Esmond, R. I. Army Edgewood Arsenal, Edgewood, Md. DA AA–15–67–C0265.

30—**Bauer Ordnance Co.**, Warren, Mich. $1,463,000 (contract modification). Modification of weaponry systems of M–114A1 command and reconnaissance vehicles. Army Tank Automotive Command, Warren, Mich. DA AE–07–68–C–1739.

31—**Western Electric Co.**, New York, N. Y. $230,417,740 (contract modification). Long lead-time components and subassemblies for radars. Allentown, Pa.; Burlington, Greensboro and Winston Salem, N. C.; Syracuse, N. Y.; Orlando, Fla.; Santa Monica and Los Angeles, Calif.; Bedford, Mass.; and Phoenix, Ariz. Army Safeguard System Command, Huntsville, Ala. DA–HC–60–68–C0017.

—**Mason & Hangar, Silas Mason, Inc.**, New York, N. Y. $14,870,357 (contract modification). Loading, assembling and packing detonator primaries and boosters at Army Ammunition Plant, Burlington, Iowa. DA AA–09–68–C–0468. $12,353,306 (contract modification). Loading, assembling and packing heavy bombs at Cornhusker Army Ammunition Plant, Grand Island, Neb. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA AA–09–68–C–0383.

—**Day & Zimmerman, Inc.**, Philadelphia, Pa. $6,000,000. Loading, assembling and packing ammunition components and projectiles, and for operation of the Kansas Army Ammunition Plant, Parsons, Kan. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA AA09–70–C–0245.

—**Atlas Chemical Industries, Inc.**, Wilmington, Del. $2,596,417 (contract modification). Production of TNT and related support services at Volunteer Army Ammunition Plant, Chattanooga, Tenn. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA 11–173–AMC–531(A).

—**Hercules Engines, Inc.**, Canton, Ohio. $2,933,839. 381 10-horsepower standard military engines and 1,422 20-horsepower. Army Mobility Equipment Command, St. Louis, Mo. DA–AK–01–70–C4163.

—**Bulova Watch Co., Inc.**, Valley Stream, N. Y. $1,292,396. Production of XM577 mechanical time fuzes. Army Picatinny Arsenal, Dover, N. J. DA AA–2170–00154.

—**Chrysler Corp.**, Centerline, Mich. $4,500,000 (contract modification). System engineering management for M60A1E2 tank. Army Weapons Command, Rock Island, Ill. DA AF03–69–C0087.

—**Thiokol Chemical Corp.**, Bristol, Pa. $2,110,221 (contract modification). Loading, assembling and packing medium and heavy caliber ammunition at Longhorn Army Ammunition Plant, Marshall, Tex. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA–11–173–AMC–200 (A).

—**ITT Gilfillan, Inc.**, Van Nuys, Calif. $1,641,000. AN/TPN–18 radars and ancillary items. Army Electronics Command, Ft. Monmouth, N. J. DA AB07–69–C0277.

—AVCO **Corp.**, Stratford, Conn. $2,311,000. Production improvement for T–55–L–11 turbine engines. Army Aviation Systems Command, St. Louis, Mo. DA AJ–01–70–C0515.

—**Adventure Line** Mfg. Co., Parsons, Kan. $1,582,624. 20-round magazine assemblies for M16 weapons family. Army Weapons Command, Rock Island, Ill. DA AF–03–70–C0042.

—**Norris Industries**, Los Angeles, Calif. $2,355,200. 81mm projectiles and metal parts. Riverbank Army Ammunition Plant, Riverbank, Calif. Army Ammunition Procurement and Supply Agency, Joliet, Ill. DA AA09–70–C0240.

DEPARTMENT OF THE NAVY

2—**Susquehannah Corp.**, Alexandria, Va. $2,433,432. Mk 30 Mod 2 rocket motors. Naval Ordnance Systems Command, Washington, D.C. N00017–68–C–2103.

—**Yardney Electric Corp.**, New York, N.Y. $1,888,320. Mk 46 Mod 1 batteries. Pawcatuck, Conn. Naval Ordnance Systems Command, Washington, D.C. N00017–70–C–1404.

—**General Motors Corp.**, Hudson, Ohio. $2,450,721. Rough terrain tractors. Hq., Marine Corps, Washington, D.C. M00027–70–C–0035.

3—**Librascope Group, Singer-General Precision Corp.**, Glendale, Calif. $1,218,000. Development of the Mk 48 torpedo fire control system. Naval Ordnance Systems Command, Washington, D.C. N00017–69–C–1212.

—**Scripps Institution of Oceanography**, University of California, San Diego, Calif. $1,754,400. Research on marine physics. Office of Naval Research, Washington, D.C.

5—**Lockheed Aircraft Corp.**, Burbank, Calif. $10,000,000 (contract modification). S–3A aircraft. Naval Air Systems Command, Washington, D.C. N00019–69–C–0385.

—**Singer-General Precision, Inc.**, Glendale, Calif. $1,131,193. Mk 48 fire control modification kits. Naval Ordnance Systems Command, Washington, D.C. N00017–68–C–1218.

8—The Naval Air Systems Command, Washington, D.C., issued the following contracts:

General Electric Co., West Lynn, Mass. $7,000,000. TF–34–GE–2 engines for the S–3A flight test program. N00019–69–C–0424.

Grumman Aerospace Corp., Bethpage, N.Y. $5,000,000. E–2C aircraft. N00019–68–C–0542.

9—**General Dynamics Corp.**, Groton, Conn. $6,205,000 (contract modification). Procurement, inspection, testing and shipment of long lead time materials, equipment and components required for overhaul and conversion of 12 Polaris submarines to C–3 Poseidon missiles. Naval Ship Systems Command, Washington, D.C. N00024–69–C–0325.

—**Sperry Rand Corp.**, Salt Lake City, Utah. $7,337,551. Guidance and control components for Shrike missiles. Naval Purchasing Office, Los Angeles, Calif. N00123–69–C–2267.

—**Yuba Industries, Inc.**, Benicia, Calif. $3,580,252. Catapult system track covers. Naval Regional Procurement Office, Oakland, Calif. N66314–69–C–1015.

—**General Electric Co.**, West Lynn, Mass. $1,413,645. Retrofit kits for T–58–8/10 engines for CH–46, UH–46, SH–3D, UH–2 and VH–3 helicopters. Naval Aviation Supply Office, Philadelphia, Pa. F34601–69–A–1028–GBCF.

10—**Lockheed Aircraft Corp.**, Sunnyvale, Calif. $14,046,050 (contract modification). Phase I of the Safeguard Systems Test Target Program. Naval Strategic Systems Project Office, Washington, D. C. N00030–68–C–0303.

—**Singer-General Precison, Inc.**, Little Falls, N.J. $1,637,057. Spare parts for inertial measurement systems in A–7E aircraft. Naval Aviation Supply Office, Philadelphia, Pa. N00383–68–A–3201–0219.

—**General Electric Co.**, Schenectady, N.Y. $1,100,000. Design and furnishing of nuclear propulsion components. Naval Ship Systems Command, Washington, D.C. N00024–69–C–5154.

11—**General Electric Co.**, Washington, D.C. $9,026,938. Operational support services for Polaris and Poseidon missile system fire control and guidance support equipment. Pittsfield, Mass. Naval Strategic Systems Project Office, Washington, D.C. N00030–70–C–0125.

—**Blake Construction Co., Inc.**, Washington, D.C. $2,638,000. Construction of gamma ray facility, Naval Ordnance Laboratory, White Oak, Md. Naval Facilities Engineering Command, Washington, D.C. N62477–69–C–0049.

12—**The Boeing Co.**, Morton, Pa. $1,680,000. H-46 helicopter rotor blades. Naval Aviation Supply Office, Philadelphia, Pa. N00383-68-A-5601-1038.

15—**Hughes Aircraft Co.**, Culver City, Calif. $8,700,000 (contract modification). Phoenix missiles. Naval Air Systems Command, Washington, D.C. N00019–67–C–0240.

—**Hercules, Inc.**, Cumberland, Md. $1,381,024. Standard missile rocket motors. Mineral County, W. Va. Naval Ordnance Systems Command, Washington, D.C. N00017–70–C–2204.

16—**University of Rochester**, Rochester, N.Y. $3,000,000. Additional research, studies and investigations to assist Dept. of the Navy in decisions regarding application and development of naval capabilities. Rochester and Arlington, Va. Office of Naval Research, Washington, D.C.

—**Dell Industries**, Waycross, Ga. $1,051,350. Mark 76, Mod 5 practice bombs. Ships Parts Control Center, Mechanicsburg, Pa. N00104–70–A067.

17—**Genge Industries, Inc.**, Port Hueneme, Calif. $7,250,381. Non-personal services for drafting, illustration and technical writing in support of weapon systems developments at the Naval Weapons Center, China Lake, Calif. Navy Purchasing Office, Los Angeles, Calif. N00123–70–C–0203.

—**North American Rockwell Corp.**, Columbus, Ohio. $2,000,000 (contract modification). Long lead time effort and materials in support of procurement of OV–10A aircraft. Naval Air Systems Command, Washington, D.C. N00019–69–C–0696.

—**IBM Corp.**, Gaithersburg, Md. $1,304,905. Mass storage media units for computer systems. Naval Ship Systems Command, Washington, D.C. N00024–68–C–1240.

18—**Clevite Corp.**, Cleveland, Ohio. $5,000,000. Fabricate and procure necessary support equipment and services for preproduction prototype torpedoes MK 48, Mod 1. Naval Ordnance Systems Command, Washington, D.C. N00017–69–C–1426.

—**United Aircraft Corp.**, Windsor Locks, Conn. $2,502,468. Propellers for C–130 aircraft. Navy Aviation Supply Office, Philadelphia, Pa. N00383–67–A–1901–1221.

—**United Aircraft Corp.**, E. Hartford, Conn. $1,254,185. TF30P408 engine spare parts. Navy Aviation Supply Office, Philadelphia, Pa. N00383–0–6900A–AG859.

19—**Westinghouse Electric Corp.**, Baltimore, Md. $9,974,729. FY 1970 procurement of AN/APG–59 radar sets. Naval Air Systems Command, Washington, D.C. N00019–70–C–0127.

—**Sperry Rand Corp.**, St. Paul, Minn. $1,400,000. Production of MK 152 computers and associated ancilliary equipment for Tartar and Talos fire control systems MK 74 and MK 77. Naval Ordnance Systems Command, Washington, D.C. N00017–69–C–2326.

—**Garrett Corp.**, Phoenix, Ariz. $1,082,910. Exhaust deflection and internal containment kits for modification of GTCP100–54 and GTC85–72 gas turbine engines. Navy Aviation Supply Office, Philadelphia, Pa. N00383–67–A–2301–0809.

23—**LTV Aerospace Corp.**, Dallas, Tex. $23,400,000 (contract modification). Procurement of FY 1970 A–7D aircraft for the Air Force. Naval Air Systems Command, Washington, D.C. N00019–67–C–0143.

—**Tracor, Inc.**, Austin, Tex. $2,006,844. Engineering technical tasks and studies to improve Navy submarine sonar equipment. Naval Ship Systems Command, Washington, D.C. N00024–70–C–1146.

—**R. D. Lambert & Son, Inc.**, Chesapeake, Va. $1,231,344. Construction of 504-man bachelor enlisted quarters at Naval Air Station, Oceana, Virginia Beach, Va. Naval Facilities Engineering Command, Washington, D.C. N62470–69–C–0738.

—**RCA Corp.**, Moorestown, N.J., $252,930,400. Engineering development of the Advanced Surface Missile System. Naval Ordnance Systems Command, Washington, D.C. N00017–70–C–2403.

—**RCA Corp.**, Morristown, N.J. $252,930,400. Engineering development of advanced surface missile system. Naval Ordnance Systems Command, Washington, D.C. N00017–70–C–2403.

24—**Honeywell, Inc.**, W. Covina, Calif. $5,420,969. Basic sonar operator trainers with data and support ware and option for three additional units. Naval Training Device Center, Orlando, Fla. N61339–70–C–0078.

—**LTV Aerospace Corp.**, Dallas, Tex. $2,027,836. Spare parts to support armament station control unit on A–7E aircraft. Navy Aviation Supply Office, Philadelphia, Pa. N00383–69–A–4201–1093.

—**LTV Aerospace Corp.**, Dallas, Tex. $1,840,299. Spare parts for A–7E aircraft. Navy Aviation Supply Office, Philadelphia, Pa. N00383–69–A–4201–1094.

—**Pioneer Recovery Systems, Inc.**, Manchester, Conn. $1,567,680. Parachute and container assemblies used in MK45 flare. Columbia, Miss. Naval Ammunition Depot, Crane, Ind.

29—**Fishback & Moore, Inc.**, Dallas, Tex. $1,535,421. Special electronic system including VHF-UHF antenna, associated data, repair parts and training manuals. Naval Ship Systems Command, Washington, D.C. N00024–70–C–1181.

—**Grumman Aerospace Corp.**, Bethpage, N.Y. $38,250,013. A–6A aircraft. Bethpage and Calverton, N.Y. Naval Air Systems Command, Washington, D.C. N00019–69–C–0075.

—**Sperry Gyroscope Co.**, Great Neck, N.Y. $2,443,000. Production of computers MK 119, Mod. 0 and Mod. 5. Naval Ordnance Systems Command, Washington, D.C. N00017–69–C–2325.

30—**Sangamo Electric Co.**, Springfield, Ill. $1,985,430. Sonar classification trainer units. Naval Ship Systems Command, Washington, D.C. N00024–70–C–1136.

MCMXLVII

DEPARTMENT OF THE AIR FORCE

1—**Chicago Aerial Industries, Inc.**, Barrington, Ill. $1,133,138. Aerial photographic equipment. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–69–C–1085.

2—**AVCO Corp.**, New York, N.Y. $1,200,000. Research and development of penetration aids. Wilmington, Mass. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04701–68–C–0021.

3—**Radiation, Inc.**, Melbourne, Fla. $4,912,000. Development and production of airborne communications equipment. Palm Bay, Fla. Electronic Systems Division, AFSC, L. G. Hanscom Field, Mass. F19628–69–C–0159

—**Martin Marietta Corp.**, Denver, Colo. $1,081,000. Design, develop and fabricate Titan IIIC space boosters and associated ground support equipment. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04695–67–C–0142.

—**Philco-Ford Corp.**, Philadelphia, Pa. $44,375,975. Engineering, furnishing, installing and testing an aircraft control and warning system. Oklahoma City Air Materiel Area, AFLC, Tinker AFB, Okla. F34601–70–C–1573.

—**Saunders Associates, Inc.**, Nashua, N. H. $1,147,500. Production of ground communications equipment. Electronic Systems Division, AFSC, L. G. Hanscom Field, Mass. F19628–67–C–0139.

4—**Cutler-Hammer, Inc.**, Deer Park, N.Y. $1,114,000. Engineering services on airborne reconnaisance systems. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–69–C–0897.

9—**North American Rockwell Corp.**, Anaheim, Calif. $122,320,000. Guidance and control systems for Minuteman III missiles. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04701–69–C–0194.

10—**General Electric Co.**, New York, N.Y. $26,438,265 and $11,535,944. J–79 engines, spare parts and aerospace ground equipment. Cincinnati, Ohio. F33657–69–C–1285 and F33657–69–C–1080. $13,380,000. J–85 series engines and related spare parts. West Lynn, Mass. F33657–70–C–0229. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio.

—**Ryan Aeronautical Co.**, San Diego, Calif. $4,547,993. Target drones, spare parts and special support equipment. Aeronautical Systems Division, AFSC, Wright-Patterson AFB Ohio. F33657–70–C–0027.

—**ITT Corp.**, Nutley, N.J. $1,000,000. Modification and testing of electronic equipment. San Antonio Air Materiel Area, AFLC, Kelly AFB, Tex. F41608–70–C–6276.

12—**McDonnell Douglas Corp.**, St. Louis, Mo. $1,151,100. Modification of RF–4C aircraft. Robertson, Mo. Ogden Air Materiel Area, AFLC, Hill AFB, Utah. F3460–68–A–2919.

—**General Electric Co.**, Philadelphia, Pa. $5,333,250. Research and development of the Mk 12 reentry vehicle. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. AF04(694)–473.

—**Lockheed Aircraft Corp.**, Marietta, Ga. $6,757,260. Spare parts for C–5A aircraft. Detachment 31, San Antonio Air Materiel Area, AFLC, Marietta, Ga. AF(657)–15053.

—**Stewart-Warner Corp.**, Chicago, Ill. $1,552,468. Radar components for AN/APN–159 altimeter sets for RF–4 aircraft. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–70–C–0433.

—**Singer Co.**, Arcadia, Calif. $10,909,667. Ejector racks, MER–10NN and TER–9A for F–4E and A–7D aircraft. Warner Robins Air Materiel Area, AFLC, Robins AFB, Ga. F09603–70–C–3900.

15—**Sylvania Electronics Systems**, Waltham, Mass. $10,240,000. Design and redevelopment of the Minuteman command and control system. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04701–69–C–0192.

16—**Lockheed Aircraft Corp.**, Burbank, Calif. $4,964,000. Services and material to accomplish inspection, modification and repair as necessary of F/TF–104G aircraft. Palmdale, Calif. Sacramento AMA, McClellan AFB, Calif. F40606-70-C-0185.

17—**Brooks & Perkins, Inc.**, Detroit, Mich. $2,066,610. Large cargo pallets for military aircraft. Cadillac, Mich. Warner Robins AMA, Robins AFB, Ga. F09603–69–A–0039.

19—**Texas Instruments, Inc.**, Dallas, Tex. $1,030,000. Aerospace ground equipment. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–68–C–0379.

—**North American Rockwell Corp.**, Anaheim, Calif. $1,187,000. B–1 avionics subsystem studies. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–70–C–0670.

—**Lockheed Aircraft Corp.**, Marietta, Ga. $1,217,331. C–5 depot aerospace ground equipment. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio.

—**General Dynamics Corp.**, Fort Worth, Tex. $1,228,780. Spare parts for F–111 aircraft. Sacramento AMA, AFLC, McClellan AFB, Calif. AF33(657)–13403.

—**IBM Corp.**, Owego, N.Y. $972,736. B-1 avionics subsystem studies. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–70–C–0671.

22—**Radiation, Inc.** Melbourne, Fla. $1,700,000. Operation and maintenance of airborne communications equipment. Palm Bay, Fla. Electronic Systems Division, AFSC, L. G. Hanscom Field, Mass. F19628–70–C–0004.

—**Olin Mathieson Chemical Corp.**, E. Alton, Ill. $1,273,294. Aircraft engine starter cartridges. Marion, Ill. Ogden AMA, AFLC, Hill AFB, Utah. F42600–70–C–0719.

—**McDonnell Douglas Corp.**, Tulsa, Okla. $1,143,049. Inspection and repair as necessary of B–66 series aircraft. Warner

Robins AMA, AFLC, Robins AFB, Ga. F–09603–70–C–1017.

23—**Bendix Corp.**, Teterboro, N.J. $3,344,481. Production of electronic components applicable to Minuteman III system. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04701–69–C–0233.

—**Honeywell, Inc.**, Hopkins, Minn. $2,000,000 (supplemental agreement). Production of dispensers and mines. St. Louis Park, Minn. Armament Development and Test Center, AFSC, Eglin AFB, Fla. AF33 (657)–16858.

24—**General Motors Corp.**, Indianapolis, Ind. $33,055,424. Production of TF–41–A–1 turbofan engines. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–67–C–0163.

—**Kollsman Instrument Corp.**, Elmhurst, N.Y. $2,426,220. Production of altimeters for various types of aircraft. Aeronautical Systems Division, AFSC, Wright-Patterson AFB, Ohio. F33657–68–C–0569.

29—**North American Rockwell Corp.**, Anaheim, Calif. $6,441,000. Production of Minutemen III guidance and control systems. Space and Missile Systems Organization, AFSC, Norton AFB, Calif. F04701–68–C–0174.

31—**Technicolor, Inc.**, Hollywood, Calif. $3,686,861. Photo optical instrumentation and related support services at Air Force Eastern Test Range, Kennedy Space Center, Fla. Range Contract Management Office, Air Force Eastern Test Range, AFSC, Patrick AFB, Fla. F08606–69–C–0008.

—**Honeywell, Inc.**, Hopkins, Minn. $3,487,492. Munitions production. Armament Development & Test Center, AFSC, Eglin AFB, Fla. F08635–69–C–0015.

—**Philco-Ford Corp.**, Palo Alto, Calif. $1,374,100. Production of electronic display equipment. Space and Missile Systems Organization, AFSC, Los Angeles, Calif. F04701–70–C–0015.

Titanium Structures Studied for Air Force

A study of high pay-off uses of diffusion bonded titanium structures in advanced airframes for aircraft is being conducted for the Air Force Flight Dynamics Laboratory by McDonnell Douglas Corp., St. Louis, Mo. McDonnell will also prepare a detailed analysis of selected structural components to determine additional cost and weight benefits of diffusion bonded titanium compared to conventional titanium design.

Objective of the study is to determine how competitive airframe structures, made of diffusion bonded titanium, would be compared to titanium flight hardware produced by conventional manufacturing processes. Competitiveness of titanium structures will be established for the present time and projected for time periods of 1975 and 1980.

The study is expected to be concluded by mid-1970. Charles Ramsey is project engineer in diffusion bonded titanium structures at the Air Force Flight Dynamics Laboratory, Wright-Patterson AFB, Ohio.

F–15 Prime Contractor Selected by Air Force

With the approval of the Secretary of Defense, the Air Force has selected McDonnell Douglas Corp., St. Louis, Mo., as prime contractor for development and production of the F–15 advanced tactical fighter aircraft. The F–15 will be a single-place, twin-engine jet fighter with performance over a broad range of altitudes and speeds. It will carry both missile and gun armament needed for typical tactical missions of fighter sweep, escort and combat air patrol.

The contract awarded to McDonnell Douglas will use cost-plus-incentive-fee features for the engineering and design effort, and fixed-price-plus-incentive-fee for the test aircraft, initial production effort, and subsequent production option quantities. Demonstrable technical milestones, which the contractor must meet to the satisfaction of the Government prior to an authorization to proceed with production, are incorporated in the award.

The airframe contractor will initially proceed only with the engineering and design effort and the fabrication of 20 development testing aircraft, at a target price of $1,146,385,000. This includes spares and equipment to support the test program. The first increment to be funded for this contract is $80,240,000. An additional contract will be negotiated in March with the successful propulsion bidder, after completion of current competition for the engine between the General Electric Co. and Pratt and Whitney Co.

Initial funds required by these contracts have already been approved by Congress in the FY 1970 budget. Future funding for the entire F–15 development and production effort is subject to annual Congressional review and approval. Subsequent production of the first wing of 107 aircraft is subject to a "not-to-exceed" ceiling of $936,591,000. This amount includes maintenance training, associated training equipment, and technical data. Since the proposed F–15 engines are still under evaluation, engine costs are not included in the foregoing figure.

The prime contractor estimates that approximately 4,000 subcontractors, located in 42 states, will be participating in the F–15 program.

Brigadier General Benjamin N. Bellis of the Air Force Systems Command's Aeronautical Systems Division, Wright-Patterson AFB, Ohio, has been designated System Program Director for the F–15.

New Missile Defense System for Ships Contracted by Navy

The Navy has awarded a contract in the amount of $252,930,400 to RCA Defense Electronics Products Division for the engineering development of its new advanced surface missile system. Known as Aegis, it is planned as the defensive surface-to-air missile system for the new guided missile ships scheduled to join the Fleet in the mid-1970s. The system is designed to destroy small, fast targets in hostile environments such as severe weather or countermeasure conditions.

Two special features of the system are an electronic scanning radar able to "look" in all directions almost instantaneously, and a dual-purpose launcher which can fire rocket-propelled antisubmarine weapons, as well as guided antiaircraft missiles. The Aegis radar and related subsystems can aid in controlling friendly aircraft, as well as locating hostile air targets for surface-to-air missiles.

Additional components of Aegis will include a newly designed data system computer and illuminators for missile guidance. The illuminator "bounces" a radar signal off the target. The missile picks up the signal and rides it to the target.

The contractor will use extensive subcontracting nationwide for materials, parts and components.

The Aegis program is part of the Surface Missile System Project of the Naval Ordnance Systems Command, Naval Material Command (NAVMAT). In addition, technical support and assistance is provided by the NAVMAT Naval Ship Systems Command. Project Manager is Captain Merrill H. Sappington, USN, whose field of responsibility also includes Terrier, Tartar, Talos and Standard missiles. Program Manager is Captain John P. Tazewell, USN.

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Air Force Tests Instant Control Tower for Tactical Operations

A tactical air traffic control central, which can convert an unattended airstrip into a "high-capacity military airfield" within one hour, is undergoing testing at the Air Force Armament Development and Test Center, Eglin AFB, Fla. Designated AN/TSW–7, the unit is part of the overall 407L Tactical Air Control System, a program managed by the Air Force Systems Command's Electronic Systems Division, L. G. Hanscom Field, Mass.

This lightweight control tower is equipped with all the communications and navigational aids needed to visually control everything from jet fighters and transports to small reconnaissance aircraft. Sometime referred to as an "instant airport," TSW–7 is designed to operate in any climate zone from tropic jungle to arctic cold. It is equipped with an air conditioner-heating unit mounted on a separate equipment pallet. Also located on the same pallet is a rechargeable battery and small charging generator which can operate the system for a short period, in case of power failure from land cables or mobile generators.

Measuring only 12 by 7 by 7½ feet, the tower shelter can accommodate three air traffic controllers. It has four Very High Frequency (VHF) and five Ultra High Frequency (UHF) transmitter-receiver radios. Additional equipments include a radio direction finder, wind speed and direction sensors, telephone and direct line communications, and two signal light guns. Additional space in the tower is provided to mount one High Frequency (HF) and two more UHF transceivers.

Advanced design features in the TSW–7 include a specially designed single-mast antenna system, solid state radios and a highly accurate radio direction finder.

In addition to its instant air base capability, the tower can substitute for fixed air traffic control towers which have been destroyed or temporarily put out of commission.

New Camouflage Proposed by Army

The Army is seeking new ways not to be seen. Under a new proposal by the Combat Developments Command (CDC), Fort Belvoir, Va., new lightweight camouflage screens will replace contemporary burlap-garnished cotton twine nets.

According to CDC, the new screen would be lighter and easier to handle.

Conventional nets had to be produced in various families of sizes, shapes and color blends to meet general as well as specific requirements, creating a logistical burden.

The new screen would be made of synthetic materials. One screen would provide 400 square feet of area concealment, erected in a domed configuration. Joined at the edges, two or more screens could be used to conceal larger objects.

Initial requirements call for the new system to offer three reversible designs: woodlands, desert and snow.

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